'It's Important to Know In Time'

Member Associated Business Papers, Inc.; Audit Bureau of Circulations.

The Newspaper of the Industry

Air Conditioning & REFRIGERATION NEWS

Production Tools for Victory

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

Technical Governmental

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office.

'Written To Be Read on Arrival'

Issued Every Monday at Detroit, Michigan

NOV. 8, 1943

Vol. 40, No. 10, Serial No. 764
Established 1926.

Inside Dope

By George F. Taubeneck

Pity Pour Luis

Luis Tullio, one of our subscribers in Brazil, was in town the other day, and we had quite a session. Also in on the party were Ned Gould of Nash-Kelvinator, Frank Conroy of Mueller Brass, and the latter's charming wife.

All of us should feel sorry for Luis and his fellow Brazilians. It seems prices have gone up. You have to pay household help more, for instance, although there's plenty available. A good maid now costs around $12 a month, and a cook can command as much as $15 a month.

Meat prices are higher, too. Of course, there's all you want to eat, but a good, three-inch thick sirloin steak has now gone up to 40 cents in the better restaurants. Pretty sad.

Somehow it reminds me of an old friend who is complaining that "the cost of living has gone up 10 cents a glass."

Brazilians vs. Japs

Back to the handsome, cultivated, well-informed Mr. Tullio, he makes an interesting point about the Brazilian army which is now being trained for overseas duty.

Although these troops are apparently headed for the European theater, they should be even more valuable in the Pacific, because they are used to jungles. The bulk of this army has been recruited from tropical jungle land similar to that which provides such tough going for our boys in their fight against the Japs.

Incidentally, Luis says the Brazilian soldier is a tough cookie, and would really cut those Nips down to size.

Scientists Worried

One group of learned men who are certainly not over-optimistic about the war are the scientists associated with Mr. Kettering and his all-star cast of inventors and invention-examiners.

These high-domed wizards, while responsible for many a startling development and improvement in our lethal weapons, are seriously concerned—privately—over evidence of German scientific progress recently. Some of this rocket stuff Nazis are throwing up at our fliers is plenty advanced, they say.

These men are also pretty sure that the Germans are ahead of us on the development of atomic power—may actually have "arrived," in fact. If they can incorporate atomic power into weapons—**and get them in production**—we might be in for the surprise of our lives.

Hence it is that these scientists are rooting for the Russians and an immediate "second front." They say that if we don't knock out the Germans pretty quick, we may never get the side out, as they say in baseball.

Muffly Chasers

All this brings to mind the fact that our side had an opportunity to build manless aerial torpedoes of a design superior to anything the Germans have shown yet, and had the chance almost three years ago.

This particular weapon, designed

(Concluded on Page 15, Column 1)

A Million Home Refrigerators Is Plan for 1944

That's OCR Program, But WPB Must Approve It

WASHINGTON, D. C.—One million refrigerators and one million washers are scheduled for production in 1944 by the Office of Civilian Requirements, but the plan requires approval by the requirements committee of the War Production Board before any actual manufacturing can be started, according to reports made in Washington last week and published by the press.

OCR is convinced after a national survey, it is reported, that both types of appliances are badly needed in American homes. Consumer demand for 5,000,000 household refrigerators and 4,000,000 washing machines now exists, OCR believes, but production of about a million each would meet current essential needs.

(Concluded on Page 23, Column 2)

Farm Freezer Makers Form Association

CLEVELAND—To coordinate promotional activities of farm home freezer manufacturers, representatives of interested firms met here recently and organized the Farm Freezer Manufacturers Association, electing as their president Henry Steinhorst of Emil Steinhorst & Sons, Utica, N. Y.

"The purpose of the new association is to combine the information, statistics, and all pertinent subjects

(Concluded on Page 23, Column 1)

Aluminum Permitted For Cooling Coil Fins

WASHINGTON, D. C.—Use of aluminum for refrigeration and heating coils and fins is now permitted, Supplementary Order M-1-i having been amended by the War Production Board on Oct. 28 to expand uses of this metal.

Supplies of aluminum are reported

(Concluded on Page 28, Column 4)

Industry Financial Aid Sought on Training Setup

PHILADELPHIA—Final details of the nationwide training program for refrigeration servicemen were worked out at a meeting of the National Refrigeration Service Manpower Committee here Oct. 27, and steps are now being taken to get the program underway in the field.

The plan as devised requires additional assistance from the refrigeration industry itself, reports W. R. Kromer, Director of Training, National Refrigeration Service Manpower Committee, and Consultant, Bureau of Training, War Manpower Commission. Cost of administering the program will have to be borne by the industry, it was explained at the meeting by J. J. Tessari, Chief of the Bureau of Industrial Training of WMC, since there are no funds available in the WMC to assist in-

(Concluded on Page 28, Column 1)

N.R.S.J.A. Admits 5 New Members

FRENCH LICK, Ind.—Five new members were accepted into the membership of the National Refrigeration Supply Jobbers Association at the annual business meeting of the association here Oct. 28.

The Howard Supply Co. of Wichita, Kan., became a regular member, and the Hinshaw Supply Co. of San Francisco and the United Refrigerator Supply Co. of Memphis were readmitted as regular members, both firms having been members previously. The Authorized Refrigerator Parts Co. of St. Louis and the Central Supply Co. of Indianapolis became term members.

(Concluded on Page 2, Column 5)

Because of lack of space not all of the papers and reports given at the French Lick conference are published in this issue, but additional material will appear in the next regular-sized issue of the News. The following are an index to the reports from the meeting published in this issue:

Brighter Picture For Refrigeration Equipment Painted at French Lick

Programs 'In the Works' For Some 1944 Production

FRENCH LICK, Ind.—Those who came to the Fall Refrigeration Conference here Oct. 28 and 29 got the dope straight from the feed-box on what the War Production Board has in mind for the refrigeration industry for the balance of 1943 and 1944, and they also got a few peeks at the kind of problems that will face the industry in the transition and postwar eras.

The conference was sponsored by the Refrigeration Equipment Manufacturers Association in conjunction with the National Refrigeration Supply Jobbers Association, and leaders in both industry and the government agencies led the discussions which were often of a very informal nature.

Some of the papers and discussions are published in detail in this issue and are indexed on this page. However, the following are some of the things brought out at the meeting which may be of immediate concern to you:

Re-rate your orders under P-126 as amended in September. Use the procedure specified in Priorities Regulation No. 1. By so doing you will help the industry get a rating pattern that will enable it to provide you with more materials.

* * *

The Refrigeration Section of WPB can give help to service firms that have difficulty in getting sufficient gasoline for their vehicles. Contact Rod Tait at the Refrigeration Section, General Industrial Equipment Division, War Production Board, Washington, D. C.

* * *

The "Freon" situation will not get better until new productive facilities—now building—are in operation. A revision of Order M-28 may be expected soon which will probably prohibit the use of "Freon" in any system except those where operating conditions or codes prevent the use of a substitute.

* * *

The revised "Freon" order will eliminate the necessity of ordering by classes and the allocation from Washington will be made only to the contract agents rather than to the suppliers.

* * *

In making use of the WPB Form 547 (formerly PD-1X) the jobber or distributor can put a number of different items on the one form, there being

(Concluded on Page 23, Column 1)

Prof. Bull's 'Farm Freezer' Costs Challenged by Locker Authority

(The views expressed in the following letter are those of the writer, and do not necessarily reflect the opinions of the Frozen Food Locker Manufacturers and Suppliers Association or the Nebraska Frozen Food Locker Association, of which he is secretary. Mr. Farquhar's connection with the refrigeration and locker industries covers a period of more than 15 years; he owns a chain of small-town locker plants housing some 1,400 lockers, and has installed more than 100 locker plants in the Middle West.)

R. R. FARQUHAR
FROZEN FOOD LOCKER PLANTS
4817 CHICAGO, ST.
OMAHA, NEB.

Prof. Sleeter Bull:
University of Illinois

If your talk before the recent convention of the National Frozen Food Locker Association in Des Moines, as later reported by AIR CONDITIONING & REFRIGERATION NEWS, was designed to start an argument and incense the owners of the nation's Frozen Food Locker Plants, it was perfect.

If it was intended to stimulate thinking regarding postwar problems of the locker industry, it likewise served its purpose.

If it represented your views on the future of the industry and the unquestioned use of millions of farm-freezers and home storage cabinets in the postwar years, then it is this writer's belief that the fact will not bear out many of your statements.

Certainly the Frozen Food Locker industry has not reached the senile stage; at least thousands of individuals, business firms, and communities are willing to wager good money that it has not, as evidenced by their desire to install locker plants. The same view is held by many men with years of experience in the refrigeration and food conservation business, who have followed closely the development of the entire frozen food industry.

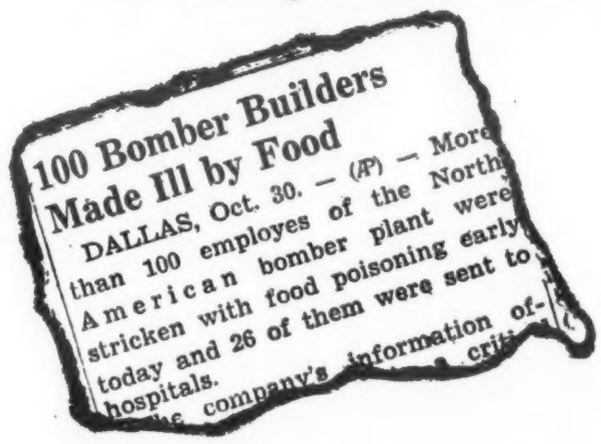
You cite the complaints you receive about individual instances where some locker plant has failed to perform the function for which it was intended, or where some operator has done a poor job which has resulted in customer dissatisfaction.

The same complaint could be levelled against any business or industry you might name. All have their problems, and those of the locker industry have been aggravated by its rapid growth and lack of knowledge on the part of many operators.

You forget, too, that you are consulted only when trouble arises, but never hear from the hundreds of thousands of satisfied customers who have used their lockers year in and year out for the storage of billions of pounds of meats, poultry, fruits and vegetables—without loss, and at

(Concluded on Page 2, Column 1)

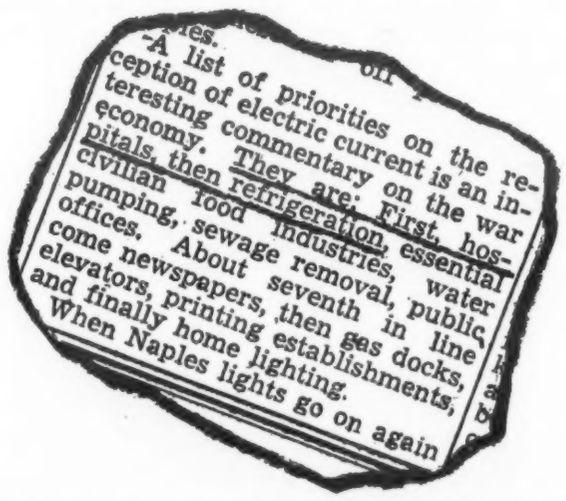
Armies in the Field Recognize the 'Essentiality' Of Refrigeration. Do We on the Home Front?



100 Bomber Builders Made Ill by Food

DALLAS, Oct. 30. — (AP) — More than 100 employes of the North American bomber plant were stricken with food poisoning early today and 26 of them were sent to hospitals.

company's information of-



-A list of priorities on the reception of electric current is an interesting commentary on the war economy. They are: First, hospitals, then refrigeration, essential civilian food industries, water pumping, sewage removal, public offices. About seventh in line come newspapers, then gas docks, elevators, printing establishments, and finally home lighting.

When Naples lights go on again

These two items taken from newspapers within the last week tell a significant story. The one on the left is a story that has been repeated over and over again this year—of scores of workers in a vital War industry being "knocked out of action" by food poisoning—which inevitably is caused by improper preservation of food.

The clipping on the right is part of a dispatch by H. R. Knickerbocker, chief of the "Chicago Sun" Foreign News Service, telling about the restoration of electric current in the city of Naples, which was one of the first jobs the Allied forces set out to do when they captured the city. Note where refrigeration is placed on the "priority" list.

If materials and manpower for refrigeration maintenance had been that high on the priority list here at home, occurrences such as that at the Dallas aircraft plant would have been kept at a minimum. Possibly this will be worth saving to show to a draft board or gasoline rationing official.

Ray Farquhar's Answer To Prof. Bull's Talk on the Place of 'Farm Freezers'

(Concluded from Page 1, Column 5)

annual saving of millions of dollars in their food costs.

The National and State Frozen Food Locker Associations are doing a tremendous amount of good work in correcting these shortcomings; in raising the standards of service; in educating the public to the proper use of lockers; in helping to pass state laws which will eventually force the relatively few careless operators to improve their plants.

The Frozen Food Locker Manufacturers and Suppliers Association, representing most of the largest locker contractors and engineers of the nation, is pledged to the construction of good locker plants—well designed, and with adequate insulation and refrigeration equipment to maintain proper temperatures for food storage. The efforts of all of these organizations will be directed along the same lines in the future, and with increasingly good results.

Most locker plant operators and manufacturing authorities—men who have thousands of dollars invested in their businesses and who cannot well afford to be wrong—regard farm-freezers and home storage cabinets as a boon, rather than a threat, to their future existence. They can't all be mistaken, despite your comments.

Types & Cost of 'Chests'

These home units fall into two distinct classes—the so-called "farm-freezer" with chilling, quick-freezing and storage compartments, and costing not $200 but from $500 upwards; and the "home-storage" unit for city residents, which is not, nor never will be anything more than a convenience. As such, however, it will justify its installation in millions of homes, in common with our many other modern home appliances and conveniences, too numerous to mention.

Despite the fact that its cost of operation is many times higher than that experienced by locker plants in storing the same amount of food; despite its first cost and depreciation and upkeep; plus the fact that mechanical and power failure can, and have, caused the loss of several hundred pounds of food in individual cases, home cabinets will undoubtedly be widely used as soon as they can be manufactured, and—and this is highly important—as soon as nation-wide distribution facilities which do not now exist can be set up to serve these cabinets.

Plants Cut Distribution Cost

In your comparison of costs, as published in AIR CONDITIONING & REFRIGERATION NEWS, the thing you intentionally ignore or completely overlook, is the low-cost distribution of food in wholesale quantities which locker plants make possible.

The installation of a frozen-storage cabinet in the home is only the first step. It is no earthly good until it serves the purpose for which it is intended—the storage of food. Where does this food come from? And at what price?

Frozen Food Supply Costly

A nation-wide frozen food distribution system through established retail channels as we now know them involves time and the expenditure of hundreds of millions of dollars for new refrigeration equipment. Despite your figures on low air-transportation costs, now pretty well de-bunked, can you imagine Farmer Jones giving his choice young steer a ride in the stratosphere for freezing purposes when a modern locker plant is just around the corner? Or his wife travelling to the airport with a few quarts of strawberries which she wants to serve the family for Christmas, when it is so much easier and less expensive to take them to the locker plant for freezing and storage? Of course not!

This problem of frozen food supply involves the freezing of huge quantities of food in the locality where it is produced; transportation in refrigerated trucks or freight cars to central warehouses in the areas where it will be consumed; transportation in trucks to the retailer who must provide far more frozen-storage space than the small ice cream cabinets presently in use in most stores.

This is an expensive system, Prof. Bull, which can have only one effect on the price of such food to the ultimate consumer. People want and will buy frozen foods in great quantity. That has been proven beyond all question. But the price will **not** be low. Canning, and transportation of many foods at relatively high temperatures will always be less expensive.

Hence, your comparison of costs in which you attempt to show the locker in an unfavorable light by including in such cost the price of slaughtering, and the processing of 1,160 pounds of food, without giving consideration to the much higher costs of food purchased through the above-described retail channels, is not only unfair, but downright misleading.

Challenges Power Costs

Too, you list electric power at 1.5 cents per kilowatt in your cost of operating a home freezer. Probably not 10% of the homes in America receive such a rate, nor ever will. You admit your cost at home is nearly twice that figure, and an average throughout the country will probably be nearer three cents per kilowatt than any other.

As an economical example of locker storage costs, the writer owns a branch locker station, in a small Nebraska town, housing 126 lockers. With a rate of 2.5 cents per kilowatt for the first 500 kwh. per month and two cents for the excess, the total power cost for 1942 was $126.59—a cost for **storage** of $1 per locker per **year**! Try to match that with any home freezer.

This does not include the cost of chilling and freezing, which is done at a near-by complete locker plant. But no home freezer can ever do a satisfactory job of chilling and freezing, despite some claims to the contrary.

Don't Like Processing

So far as the "farm-freezer" is concerned, even farmers who have some knowledge of slaughtering and cutting have proven by their patronage of locker plants that they want to avoid such work wherever possible. You know as well as I that not one farmer in a hundred can do a good job of processing.

Where a modern, complete service locker plant has been installed in a town which formerly had only a limited-service, cold storage plant, the bulk of the patronage has gone to the new plant. And this was as true through the depression years of 1932-1937 as it is today.

Of course there are going to be many farm-freezers installed, for the convenience of having the food supply handled at home will always be attractive to some people. Time will tell how widespread the sales of such cabinets will be, but the price of such complete cabinets will pay for a good many years of locker rental.

By and large, Prof. Bull, locker plant owners are pretty good business men. Very few of them have failed. The locker business has been, is, and will be a successful business, because it provides food, especially in food producing areas, at a lower cost than is possible through any other means.

Demand Larger Locker Plants

The present desire of so many plant owners to enlarge their plants is caused purely and simply by consumer demand, not all of which is occasioned by the present food situation, but by the growing recognition of the value and economy of locker service. These men are not interested in spending additional thousands of dollars on their plants for fun, but because their customers are forcing them to do so. And this demand comes from **satisfied** customers—hundreds of them in every community.

When home storage units are available, many of these same satisfied customers are going to have them, but the great majority will still continue to use their locker plant for their source of food supply, processing, and reserve storage, because it will continue to be the most economical and satisfactory way of doing things.

While you go on playing your cards close to your chest, thousands of successful business men will make millions in the frozen food locker industry, and millions of new families will receive the benefits of better food at lower cost.

R. R. Farquhar.

Hotpoint President

RAY W. TURNBULL

* * *

CHICAGO—Ray W. Turnbull, executive vice president of Edison General Electric Appliance Co., Inc. (Hotpoint), has been elected president of the company, succeeding A. D. Byler, who has retired because of ill health, announces George A. Hughes, chairman of the board.

Mr. Byler will remain with Hotpoint as a consultant to the president and as a member of the board of directors.

Mr. Turnbull is one of the company's oldest employes in point of service, having started with Hotpoint in 1910, shortly after the firm was founded, as a helper in the foundry. He worked his way through the factory assembly lines, then to order service, next advertising, and eventually became sales manager.

In 1931 he was elected vice president, becoming executive vice president in 1940.

N.R.S.J.A. Re-elects All Officers For 1944

(Concluded from Page 1, Column 3)

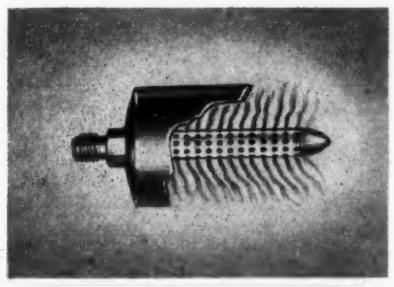
All officers of the association were re-elected, these being Harry Alter, president; H. W. Small, vice president; H. W. Blythe, secretary-treasurer. Fred B. Hovey is the executive secretary. Directors include Alex H. Holcombe, Jr.; L. C. Batho, R. M. Graves, H. R. McCombs, Joseph M. Mideke, J. M. Oberc, George J. Roche, Robert W. Sheperdson, and Harold G. Stern.

Further reports on the association's activities as reported at the meeting will be published in a future issue of the NEWS.

DESIGN.. ....MAKES THIS REFILLABLE DEHYDRATOR MORE EFFICIENT

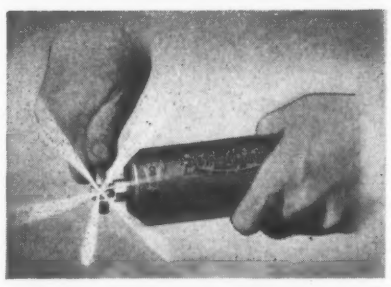
This product is available under L-126.

Cross section of Type 743 Henry Dehydrator

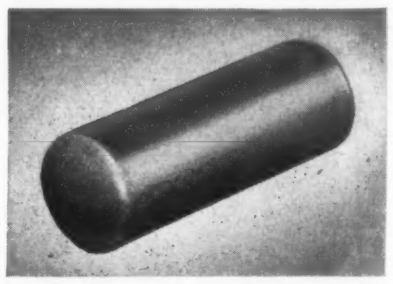


Greater Efficiency Because of Patented Dispersion Tube which is silver soldered to the inlet fitting. Note that the refrigerant must pass through hundreds of tiny holes in the brass perforated tube. There can be no channeling of the refrigerant as it passes through the dryer. Consequently, the entire volume of the dehydrant is exposed to penetration by the refrigerant. The result is maximum efficiency with minimum pressure drop.

Strainer Tube Can Be Easily Cleaned or Replaced. The reinforced monel strainer tube is silver soldered to the outlet fitting. Due to the fact that it is an integral part of the tube assembly, the unit can be cleaned again and again without danger of damage to screens with resultant by-passing of the refrigerant. Replacement screens, however, are available if necessary.



Abso Dry Pressure Sealing Process positively removes not only every trace of moisture from the dryer after factory assembly but also provides a positive indication that there are no leaks in the unit and that no moisture has been introduced up to the time of actual installation. Loosening of the seal cap prior to installation produces a hissing sound due to the escape of dehydrated air indicating that the dehydrant is absolutely dry.



One-Piece Drawn Brass Shell
Type 743 Dehydrators in the 6" length are drawn in dies so that they have only one joint – a most desirable feature. Larger sizes have soldered end caps at both ends.

Easy to clean! Easy to restore to original efficiency by merely replacing the dehydrant! These are your first reactions when you remember field problems encountered in servicing Refrigeration and Air Conditioning installations. Apart from the refillable feature, however, Type 743 Henry Dehydrator should be the choice of anyone interested in more efficient removal of moisture in a system. This is because many of the standard Henry features of design and construction that have made Henry Dehydrators the choice of the Industry are incorporated in this refillable dehydrator. You will find these features described in detail on the left.

Type 743 Refillable Dehydrator is available in a series of sizes and capacities that will take care of the majority of commercial installations. Best of all, the unit is so reasonably priced that it will pay any service or contracting organization to use it as standard equipment.

Table of Essential Buying Information for Type 743 Dehydrator with Refill Plug and Dispersion Tube. Filled with Silica Gel

CAT. NO.	SIZE CONNECTIONS	LIST PRICE FILLED	H.P. OR TONNAGE RATING	DEHYDRANT CAPACITY CU. IN.	SHELL LENGTH INCHES	OVER-ALL LENGTH INCHES
7434	¼" Flare	$ 5.75	1½-2	20	6	8⅜
7435	⅜" Flare	6.15	1½-2	20	6	8⅝
7436	½" Flare	6.50	1½-2	20	6	9
7437	⅜" Flare	9.40	3	40	12	14¾
7438	½" Flare	9.75	3	40	12	15
7439	½" Flare	12.55	5	60	18	21
7439-A	⅝" Flare	13.15	5	60	18	21¼

HENRY VALVE CO.

3260 West Grand Avenue, Chicago 51, Illinois

PACKLESS AND PACKED VALVES • STRAINERS • DRYERS FOR REFRIGERATION AND AIR CONDITIONING
AMMONIA VALVES • FORGED STEEL VALVES AND FITTINGS FOR OIL, STEAM AND OTHER FLUIDS

★ APPROVED FOR NAVY, MARITIME COMMISSION AND ARMY USE ★

Prospects on the Continuation Of War Production

With a Look At Some Probable Problems In Reconversion To Refrigeration Work

By A. B. Schellenberg, President, Alco Valve Co., and Vice President, Rema*

The topic assigned to me "Prospects on the Continuation of War Production" sounds a little like a topic for one of our radio prognosticators. I assure you I will make no attempt at predicting when this war will end nor how. My job, as I see it, is to set the stage for a discussion of postwar planning.

In reviewing the program for our meeting it seemed to me that very little time or attention has been assigned to the subject of winning the war. It is easy to understand how a group of farsighted manufacturers may have become so accustomed to thinking into the future that they can accept the present and the immediate future as an established fact. It is certainly almost too obvious to mention the fact that there will not be much point in this postwar planning meeting of ours if we don't win this war. It is equally true that if we have no idea of what we are going to do after we have won, the winning may be equally pointless.

Let us not forget for one moment that our biggest and most important job is still the winning of this war. We are now in a phase of this war which is sad to contemplate—a heart breaking period so hard to understand. Our ultimate victory is practically a foregone conclusion, and yet, between now and the actual end of the war more of our men and women will be killed and wounded than during the successful period just past.

Here we are, sure to win and, yet, to do so we must sacrifice so many. If today our Armed Forces were equipped with every bit of war material they could possibly use, there would still be too many lives lost in achieving victory. We dare not permit our confidence in victory to slow up our war production now, for to do so would indelibly put upon us the blood of men needlessly sacrificed.

Before we become too deeply engrossed in our postwar thinking it would be well for us to contemplate for a few moments that indefinite period between now and the war's end. This may very well be the most trying period we will face.

Without careful planning we may find ourselves operating at curtailed rates of production of war materials; faced with a reconversion problem; under extreme financial pressure with our working capital tied up in inventory for cancelled contracts; behind the parade because our competitors—perhaps, old ones—perhaps, new ones, have gone into the market ahead of us—to mention only a few of the possibiilties.

From Now to War's End

This transitional period, from now until the war's end, is as difficult and challenging as is the true postwar period. This is particularly true in view of the fact that this war will not end abruptly and completely. I believe it is pretty generally accepted that we will complete but one phase of this war at a time. This time there will be no single day on which all war will cease.

For this reason, the problems of war production will be inevitably, and in a changing degree, intermingled with reconversion problems and postwar problems. There will be no positive and definite separation, but, instead, an ever increasing mixture of the problems for many months to come.

Obviously, planning for this period will require us to think soundly, follow closely the progress and pattern of the war, grasp at every straw in the wind and attempt to interpret it and to make very frequent use of our crystal ball. Each of us must attempt to predict what will happen to our war production, based upon the type of war equipment we are making and the nature of the war at any particular moment.

We will also be forced to make intelligent guesses as to the course which will be plotted for civilian supplies. As to the effect of the war's progress upon the production of various war materials, I am certain you are as well qualified as I to make predictions.

What Weapons Are Needed Now

It seems apparent that the production of ships and planes and food handling equipment will continue in volume longer than other types of war material such as: Tanks, guns and munitions.

If you are manufacturing parts or equipment for use on board ships, in planes or for food handling, certainly you have sound reason to expect to be in the war production business for some time to come.

At present our Armed Forces are requiring more bombs and less shells. Now that the African campaign is behind us, demands for tanks and tank parts — and equipment peculiar to the dry, sandy battlefields, will no longer be required in any quantity.

I have given just a few rather obvious examples of the effect upon the progress and pattern of the war upon war production — enough examples, I believe, to indicate the importance of attempting to interpret our war progress in terms of our own particular production.

There, undoubtedly, will be a number of spotty cut-backs in production which will be unpredictable in light of the war progress and pattern. It will be difficult to know when we have over-produced and the only possible assistance in this direction that I can suggest is constant contact with the Procurement Divisions of the Armed Forces and your prime contractors.

Problems of the Interim

Generally speaking, I believe we can look forward to fewer radical design changes and greater quantities of some metals, such as aluminum. I believe we must face a continued "Freon" shortage for it seems indicated that the demands for aerosal, which, as you know, contains "Freon," will increase in direct proportion to the increase in our activity in the Pacific area.

The problems of plant and production reconversion will be peculiar to each of us. If you are converting from gliders to compressors you will, of course, have a greater problem than the company converting from Army walk-in coolers to civilian refrigerators.

In some respects there will be an advantage in being forced into complete reconversion. The company forced to start from scratch will be able to eliminate many obsolete and costly production methods. Such a company will be in a position to modernize and improve its production flow.

Those of you who do not have major reconversion problems will do well to bear this in mind, for there is real danger that you may be lulled into attempting to meet the postwar competition with prewar production methods.

'Dream' Plants May Fade

It is very possible that some companies may be faced with the need for expanded production facilities during the reconversion period. A company manufacturing products in heavy demand for use in occupied countries and by our Armed Forces in winding up the war may find that materials have been made available for limited civilian production and that its competitors are getting into the civilian markets while its plant is still completely loaded with war production.

Such a company will now be forced to make judicious use of subcontracting facilities if it expects to enter the civilian markets as they open up. This should not be too difficult to accomplish, for, certainly, at this time there should be ample sub-contract capacity available. There is, of course, the possibility that such a company may wish to obtain additional production equipment.

In this respect, I am certain that almost every manufacturer in the United States—yes, and even in foreign countries, expects that when the war is over he will be able to buy Defense Plant Corp., government-owned, equipment for a song. Without doubt, this problem of government-owned manufacturers' facilities will be one of the major postwar problems.

When, tonight, you are happily dreaming of the machine tool and plant bargains you hope some day to find, it would be well for you to realize that this equipment is in the same category as the surplus stocks of government equipment of your industry's manufacturer that gave you nightmares last night.

If the government sells the production equipment at depressed prices isn't it logical to expect that they will also sell most of the estimated 75 billion dollars worth of surplus equipment at cut-rate prices?

At our last Industry Advisory Committee meeting the question of providing a limited supply of raw materials for civilian production was discussed by the WPB officials. Nothing official has been done in this direction, but it is very encouraging to note WPB officials are thinking constructively along these lines.

The Pattern For a Resumption of Production

It would seem indicated that when such gradual transition is permitted, it will follow a pattern something like this:

A limited amount of materials will be permitted—first, for some of the essential major components of refrigerated systems such as compressors and evaporators. This will provide maximum flexibility of application to civilian needs.

Specialized type of equipment will rightfully be withheld until later. Chances are, the quantities of materials—assuming, of course, that they are not required for war production will be assigned in a manner which will permit both companies completely out of the business and those in the business for war production to get back into civilian production.

This means that some alternate gauge of material quantities will be set up. As, for example, a fixed percentage—perhaps, 20 or 25% of the 1940 dollar volume, or of the dollar volume of rated orders received during a previous period or a volume equivalent to the volume of orders on hand.

Understand that what I have told you is in no way an established fact and is only a prediction of what might come about, based upon indications given by some of our farsighted WPB officials.

In closing, let me again remind you that the war is not yet won and that we cannot afford to over emphasize our postwar planning at the expense of our war effort. We must find ability enough and energy enough to superimpose upon our present high production activity sound postwar planning and preparation.

*Address before the meeting of the Refrigeration Equipment Manufacturers Association, French Lick, Ind., Oct. 28.

In Which We Serve Freedom...

This is the story, briefly told, of men and women who turned from the arts of peace to the grim trade of war. And in their story of individual achievement you may read the story of America.

In December, 1941, the men and women of Kelvinator were building the revolutionary Moist-Master Kelvinator Refrigerator, which provided ideal humidity for keeping uncovered foods fresher days longer. Based on Kelvinator's remarkable sales advances in 1940 and through 1941, Kelvinator retailers—backed by the industry's soundest franchise—were looking forward to the greatest sales gains in refrigerator history.

And then, virtually overnight, the men and women of Nash-Kelvinator, so well versed in production for peace, turned to production for war.

Now in this December, two years after Pearl Harbor—what account can we and they render of our war service?

This . . .

Having designed and built the incredibly precise Polarsphere Sealed Unit, we are now building intricate Hamilton Standard propellers for Flying Fortress, Liberator, Mosquito, Mitchell, Lancaster, Baltimore, Dauntless, Havoc, Skytrain and Skytrooper planes. And we have become the largest manufacturer of this type of aircraft propeller in America.

We are building the great 2,000 h.p. Pratt & Whitney supercharged, eighteen-cylinder engines that power the Vought Corsair fighters of the U. S. Navy. And these are the planes that are helping to break the back of Japanese air power.

We are now readying our production lines to build Sikorsky helicopters for the Army Air Forces. And this newest aerial marvel, which can rise vertically, hover motionlessly, fly forward or backward, will be built only by Nash-Kelvinator and its designers, the Sikorsky Division of United Aircraft Corporation.

Having a reputation for precision manufacturing, we are building governors for the propeller mechanisms of Flying Fortress, Douglas, Consolidated North American and Martin bombers—and Navy PBY1 and PB4Y1 patrol bombers. And, we are now one of the largest manufacturers of binoculars in the world.

In this brief period of less than two years, Nash-Kelvinator facilities have been expanded tremendously and our production for war is now virtually double our former production for peace.

This is how we have served America . . . have served you . . . are serving freedom. This is the story of how free men and women, with the will to stay free, the desire to keep America always a land of progress and individual opportunity, are working day and night to hasten Victory so that they may turn once again to the building of an even finer Kelvinator.

***SCRAP IS POWER** . . . Cooperate with your industry! Salvage all inoperative parts containing critical materials . . . put vitally-needed scrap back into the scrap TODAY!*

The men and women of the Propeller Division of Nash-Kelvinator Corporation have been awarded, and proudly fly and wear, the famous Army-Navy "E" for High Achievement in War Production.

LOOK AHEAD WITH KELVINATOR

DIVISION OF NASH-KELVINATOR CORPORATION

Kenosha · Milwaukee · DETROIT · Grand Rapids · Lansing

More Help For Refrigeration Industry Hinted by Fred Smith in Rema Talk

FRENCH LICK, Ind.—A comprehensive review of what has been done in the War Production Board to help the commercial and industrial refrigeration industry to do its job of supplying military and essential civilian requirements, and a peek into some "possibilities" for expanding these functions were presented to members of the Refrigeration Equipment Manufacturers Association at their meeting here Oct. 28 by Frederick Smith, Chief, Special Equipment Branch, General Industrial Equipment Division, WPB.

Expressing himself as "glad to get back with the industry" (Mr. Smith was in refrigeration before joining WPB) the speaker likened the meeting to that of his meetings with the Refrigeration Industry Advisory Committees, which he praised highly for their contributions and suggestions.

Mr. Smith reviewed first Limitation Order L-38 as amended, pointing out that the amendments were aimed at simplifying the necessarily restrictive provisions of the order.

A "listing" procedure was followed whereby "List A" shows the items which can be sold without restrictions; "List B" reveals items which might be sold to certain agencies or on approved orders; "List D" was set up to prohibit the further manufacture of certain items, restricting the manufacture of a number of items for civilian use only from inventory on hand; and "List C" to set up the uses which are considered essential.

The amended L-38 also gave the industry special application forms PD-830 and PD-831 in order to get more specific information on a simplified form and to assure that all applications forms for refrigeration equipment would be processed by the Refrigeration Section of WPB.

Production control was also established on the basis of rated orders on hand or previous quarters' production for similar products.

Some Appeals Granted

A procedure was provided to take appeals to the restrictions under the order, and a number of appeals have been granted permitting the completion of such items as "reach-in" refrigerators, "walk-in" refrigerators, water coolers, farm freezers, self-contained air conditioning units, vegetable display cases, and ice cream cabinets, where the manufacturer had most of the material in inventory, but needed some extra material.

A proposed revision of L-38 is now being considered, and the following are some "possibilities" in the revision:

1. "List A" may be expanded to permit the unrestricted sale of certain additional items.

2. "List B" to be revised, permitting certain types of equipment to be sold to certain classes of users without the necessity of an authorization and with an automatic rating being provided.

3. Granting of ratings for complete new equipment under CMP Regulations 5 and 5-A and P-126 without the necessity of any special application.

4. To provide for refrigeration equipment included on large projects to be listed on WPB-617 rather than filing a separate application.

5. To set up production control on the basis of rated orders or a percentage of 1940 production by quarters.

6. To permit completion of any prohibited items providing 75% of the material is in inventory and not usable for other products.

The effect of this proposed revision (if approved substantially as outlined) would be to reduce the number of applications by approximately 50%; permit some increase in 1944 production within the limits of material available provided the manufacturer has rated orders for such increases; and to allow manufacturers who have no pattern of rated orders because of other war work gradually to get back into business by means of the formula of permitting a percentage of 1940 production.

The September amendment to the Repair Parts Order P-126 was a major victory for the industry, as Mr. Smith outlined it, for it eliminated the necessity of a Certificate of Authorization; raised the rating level to AA-1 and AA-2 for practically all types of refrigeration equipment; provided for inventory accumulation with AA-2; and provided for the replacement of complete sub-assemblies.

Mr. Smith then reviewed the Limitation Order L-126, and outlined some possible revisions in the various schedules as follows:

Schedule I (water coolers) was amended last spring to permit the manufacture of shipboard coolers only and to correspond with the water cooler restrictions of Order L-38. Now being considered is a possible revision of this schedule to permit the manufacture of a single model 10-gal. per hour cooler, and possibly one model of a cafeteria type water cooler for land use, if water coolers are permitted in the revision of L-38.

Schedule II (condensing units) has been amended to permit steel for compressor bases on units of less than 3-hp.; to permit the manufacture of both 3-hp. air cooled and 3-hp. water-cooled units; to permit the manufacture of water-cooled units of 2-hp. or less where certain operating conditions exist; to provide for special design when operating conditions were below —25° F.

Schedule V Studied

Schedule V (commercial cabinets) is being considered for revision to eliminate the specific sizes of "reach-in" refrigerators and in their place permit the manufacture of four or five sizes of "reach-in" refrigerators, allowing each manufacturer to choose his nearest standard size to the specified sizes in the Order.

Schedule VI (tubing) has been amended to permit the use of 25 feet of copper tubing for connections instead of 15 feet of copper tubing.

Mr. Smith next discussed the "Freon" situation, tracing the growing military demand for this product. The demand will continue to grow, Mr. Smith predicted, and our Allies may want some of it too.

However, additional production facilities are being built as quickly as possible, including a plant located in the central part of the country. Production of "Freon" by next March will be considerably more than double the production in May of 1943, Mr. Smith predicted, and it will increase beyond that point.

Little 'Freon' Relief

However, the WPB executive declared that the industry cannot expect much relief from the "Freon" restrictions until the new plant is in operation.

With further reference to "Freon," Mr. Smith declared that a proposed amendment to Conservation Order M-28 which will probably issue shortly will "spell out" where "Freon" can and cannot be used.

This amendment will virtually prohibit the use of "Freon" in all systems with certain exceptions where operating conditions or codes prevent the use of substitute refrigerants.

The proposed M-28 amendment will eliminate the necessity of ordering by classes and the allocation in Washington will be made only to the contract agents rather than to the suppliers as is the case now.

Mr. Smith then turned to a discussion of certain specific programs for refrigeration equipment that had developed, and also told about some future programs which are being considered. These programs are as follows:

1. FROZEN FOOD LOCKER PROGRAM

This program was in preparation early last Spring, even before the Senate hearings were called. The program as finally approved called for a "metals bank" of materials, enough for 350 to 400 lockers. A recent revision of policy in granting applications has been agreed upon by WPB and the War Food Administration.

A 1944 program comparable in size to the 1943 program has already been submitted to the Requirements Committee of WPB.

2. WATER COOLER PROGRAM

The Refrigeration Section of WPB has twice requested material for the manufacture of a limited number of water coolers, but the situation particularly as regards copper prevented the program from going through. It was impossible, said Mr. Smith, to draw from the material allocation for refrigeration and industrial air conditioning even though the quantity required was comparatively small.

Officials of the Refrigeration Section of WPB believe that there is a demand for water coolers that justifies production of industrial-type water coolers, but before asking the higherups for a reconsideration of the matter, an effort is being made to explore the possibilities of diverting the coolers now on rental to office buildings and less essential uses, to uses more essential to the war effort.

An Industry Advisory Committee of the Water Cooler Rental Companies was established, but after some discussion it became apparent that the plan would be impractical, and it is now hoped that some production may be permitted in 1944 if the critical labor situation does not prevent it.

A thorough survey and analysis of the need and requirements for "farm freezers" has been made, but at the present time officials of the Section do not see how the need justifies the material and manpower necessary to build such products.

It is recognized that there is a justified demand for a limited production of "reach-in" and "walk-in" type commercial refrigerators for civilian use and under the revision of L-38 it may be that production will be allowed to the extent of rated orders on hand or on the basis of a percentage of the 1940 volume.

A Task Committee of the General Refrigeration Industry Advisory Committee made up of Messrs. Munce, Faust, and Pendergast, has made a very complete study of the refrigeration requirements for food preservation. This study was based on the estimated amount of refrigeration equipment in use by classes of processors and by types of distribution. A replacement factor based on conservative depreciation was then used to determine how much replacement equipment should be required.

More Replacements Asked

The Refrigeration Section is proposing that a gradual increase of production of refrigeration equipment for replacement be permitted to insure adequate food preservation facilities. It must be recognized, however, that this increase, if authorized, will be gradual and over a period of months rather than an immediate step-up.

In view of the fact that some 90% of the output of the refrigeration and air conditioning industry today is going to the Army, Navy, and Maritime Commission, it was felt advisable to set up a separate unit to follow the deliveries of this type of equipment and to assist the manufacturers in every way possible in securing the needed components and to break the other bottlenecks which might delay deliveries.

Recently added to the Refrigeration Section staff are two engineers familiar with this type of equipment who will act as the WPB point of contact between the manufacturers and the claimant agencies in expediting the needed deliveries of this type of equipment. Any problems which the manufacturers have in making deliveries of such orders on time should be referred to Mr. Heintz or Mr. Lambeth.

Under CMP the basic rating assigned to the refrigeration industry in the third quarter was AA-3. In the fourth quarter this basic rating was raised to AA-2X, with a further provision that CMP ratings would follow the rating pattern shown by the manufacturers on CMP-4B applications.

This meant that in no event would the CMP rating be less than AA-2X and will be AA-1 or AA-2 to the extent that the manufacturers had AA-1 or AA-2 business on their books.

Commencing in the first quarter of 1944, smaller users of controlled materials will get a yearly allocation which, in most instances, will obviate the necessity of the manufacturers filing each quarter.

Any smaller user of controlled materials who does need additional materials during the year, will file his interim request with the Regional Office. Large users of controlled materials will continue to file quarterly with Washington.

It is felt with the AA-1 and AA-2 ratings now applicable under P-126 and CMP Regulation 5, that manufacturers will have a rating pattern for repair parts sufficiently high to obtain necessary components much quicker than heretofore.

Christmas is the *one day* of all the year when every housewife least wants to be tied to her kitchen. Yet a big holiday dinner, with all the trimmings, calls for more work and preparation than the "three squares" she serves every day.

That's why Frigidaire's December magazine ad tackles a particularly timely problem...serves an especially useful purpose. For it's designed to help her have more fun with her family by getting a head start on her work.

This new message is the ninth of a series of helpful wartime suggestions which, month after month, have helped the housewives of America to make their ration points go farther; guard their families' health, yet save time and money by making more efficient use of their refrigerators. It's just another link in a long chain of good-will builders which are helping Frigidaire Dealers to keep in touch with post war "prospects" for refrigerators, ranges and other electrical work-savers.

You'll find this new message in the December issues of Ladies' Home Journal, Woman's Home Companion, Good Housekeeping, McCall's, Better Homes & Gardens, American Home, True Story, Farm Journal and Farmer's Wife . . . with a combined circulation of 24 million!

Book requests top 6 million!

Like every previous ad in the series, this message urges readers to call on their Frigidaire dealer, for a free copy of WARTIME SUGGESTIONS, Frigidaire's helpful 36-page booklet which answers dozens of food and refrigerator problems. Requests for this booklet now total more than 6,000,000 copies. And that's "best seller" rating in anybody's language.

"Advance Meal Preparation" is the theme of this attractive holiday ad which will appear in 4 colors in most of the publications on the schedule. It's a subject which already has proved to be of great and universal interest to women.

Listen to: GENERAL MOTORS SYMPHONY OF THE AIR
Every Sunday afternoon, NBC Network

For Excellence ARMY E NAVY in War Production

FRIGIDAIRE Division of GENERAL MOTORS

Peacetime Builders of Home Appliances, Commercial Refrigeration, Air Conditioners

'Now Is the Time For Manufacturers To Chart a Clear Sales Policy Course'

By H. W. Small, The Thermal Co., St. Paul, Minn.*

We all discuss our postwar prospects freely. It's another matter to stand up here and put yourself on record. I expect to stick my neck clear out without a chance of being able to pull it back in unnoticed. My views will be considered as visionary or practical, depending entirely upon how closely I agree with each listener's personal viewpoint. Whether we are in agreement is not nearly so important as whether I can strike a chord that causes some personal and corporate introspection.

The American people have thrived on fighting. We first fought the ocean and the climate; then with the help of the English, we fought the Indians and the French; next, with the help of the French, we fought the English; then we went back and fought the Indians. This just about eliminated them, so we took on the Mexicans. There weren't any real worthwhile opponents left in the neighborhood, so we took on each other. That took a lot of sap out of us, but we did a little training with the Spaniards and went back into big time alongside the French and English in 1918.

Today we are all battling a common enemy. The energetic agressiveness that stirs each of us is now directed against a common opponent. The demands on this energy are so great that the most we can summon is none too much. In our industry, we are a vital part of the war effort, regardless of which tooth in the cog happens to be ourself. No matter how remote the battlefield, its effects are demanding more and more of our stamina.

The innumerable regulations, forms, records and bureaus are but the daily manifastation of how each of us are being drained to help defeat the common enemy. Until this is done with complete finality, your competitor is just another guy, and his scalp is in no danger. Times like these bring out all the good points in your competitor, and practically nothing he does can generate more than a casual lift of the eyebrow.

While we are all in this mood, let's take an inventory of ourselves. Let's review our sales policy and our procurement policy of pre-war days, and see if we don't want to make some changes in them after the war. Let the chaldron of fire we now stand in become a purifying agent that smelts out the bad but leaves us a solid alloy from which we can tool up for the future.

There are many in the industry who are smug and self-satisfied. They feel that their tools are in order, but the tools for the postwar period must be sharper and cut more keenly if we hope to fill the same size niche in the postwar period that we did in the pre-war period. True—our momentum will carry us for a while, but let's not mistake it for self-propelled progress.

I suppose a great many thousands of dollars have been spent by those here today on market and marketing surveys. The door to the market they seek is so close that I am reminded of Aunt Polly who lost her glasses and was looking hopelessly for them when Tom pointed them out on her forehead.

In the postwar period, many new factors will enter the industry. The names of some major factors are known to all. The names of others will come as a distinct surprise.

They, as a group, will not overlook an established marketing organization that is today—right now—equipped to place in the hands of the user, in running condition, $100,000,000 dollars worth of commercial and industrial types of refrigerating equipment.

It is presumed that the postwar consumption of mechanical refrigeration will amount to many times this sum, but I am referring to an existing set-up that only needs a fair amount of cultivation to produce a respectable crop.

Who or what does this present set-up consist of? It consists of the "betweeners." There is a group over here that "make it," and a much larger group over here that use it. Everyone else is a "betweener."

*Talk delivered at the Fall Conference of the Refrigeration Industry, French Lick, Ind., Oct. 29.

Editor's Note: At the conclusion of Huntington Small's talk on postwar refrigeration industry trends, problems, and policies the St. Paul jobber received the most resounding hand from those attending the French Lick meeting that we've heard in many a year. When the session was over a majority of those present took the time personally to congratulate Mr. Small on his enlightening remarks.

This tribute was to a man who while up to his neck in the everyday business of making a living in the refrigeration field, has given some thought to its problems—present and future—and also to some of the paths it may take in the future. These are the thoughts not of a "marketing expert" brought in from the outside to analyze the business, but of a man who has lived with and watched the industry grow for many years.

Who Are the 'Betweeners'

"Betweeners" have many "aliases." They are better known as "servicemen," "jobbers," "dealers," "installers," "manufacturers' agents," "contractors," "engineers," "retail stores," "mail-order houses," and "independents." If I have missed any, the slight is not intentional.

The method used by the builder of the product to place it in the user's hands is called his "Sales Policy." I have put Sales Policy in quotation marks. If I had used **Sales Expediency,** I could have saved the quotation marks.

Many of these were developed like Topsey—they just grew. On occasion, some manufacturers must have confused Sales Policy with Foreign Policy. Trial, error and immediate gain were often determining factors.

Net result is that we now have several hundred varieties of policies confronting the "betweener." They tend to create cross currents which neutralize each other and in so doing, create a whirlpool which shows a lot of action but never attains a goal.

Now is the time for each manufacturer to chart a clear course. It is also a time for each "betweener" to decide on how he can best fit himself into the pattern of things to come. We must face our future and decide where we belong. We must recognize that our suppliers and customers are a definite part of our enterprise and must be given full consideration in the development of any permanent policy.

In the postwar period, there will be four general types of manufacturers. The industry has never had adequate accepted terms for describing the various types of manufacturers, so I feel at liberty to coin my own.

1. Those who manufacture extensive lines of complete mechanically refrigerated items largely built within their own shops. These are **PRIME MANUFACTURERS.**

2. Those who specialize in the manufacture of a limited variety of complete mechanically refrigerated units. The cabinet work probably done in their own shop while the mechanical items are assembled but not made there. These are **ASSEMBLY MANUFACTURERS.**

3. Those who manufacture the items that are necessary for the operation of a system but which by themselves cannot perform a cooling function. These are **PARTS MANUFACTURERS.**

4. Those who manufacture products of a general nature used in a refrigerating system but whose use is in no way limited to refrigeration. Copper tube, fittings and belts are products of this group which we will call the **SUPPLY MANUFACTURERS.**

I predict that in the postwar period:

Prime Manufacturers will increase from 50 to 100%; that Assembly Manufacturers will increase more than 2,000%;

Parts Manufacturers will increase 50%;

Supply Manufacturers will remain much as they are now.

Assuming that the American and foreign markets are able to absorb the products of these builders, let's take a look at the available means for transferring these products from builder to user. Here again we use many terms not entirely descriptive of the functions performed, but we can get along without coining new ones.

First we have the

FACTORY BRANCH, which is only considered when its function is to make sales to a user. If a branch makes no sales of this type it should be considered as a part of the next group which is the

WHOLESALER, who can be called a jobber, a distributor, or anything else, but who shall be included in

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'To Be Good For You, Your Plan Must Be Good For the Customer'

(Continued from Page 8, Column 5)

this group if he owns and maintains a stock of merchandise, and if he makes no sales to the ultimate consumer.

The third group are the **DEALERS** who include servicemen, contractors, retail stores, utilities, or any type of operation which buys the products of the industry and resells them to the user.

The **MAIL ORDER HOUSE** and the **DIRECT-BY-MAIL MANUFACTURERS** constitute the last group, and they will certainly be a factor in postwar refrigeration distribution.

Recalling that I only included in the factory branch groups those branches that sold direct to the user, I doubt that there will be any material increase in their number.

I expect an increase of 300% in the wholesalers group, and a 1,000% increase in the dealer group. As the mail order group is relatively small in number at present, no percentage figure can approximate the increase. Suffice to say, they will greatly increase in both volume and numbers.

I don't expect anyone to agree with my figures, but before making your own estimates, look carefully at the definitions I am using.

You, as a manufacturer, wish to place your product in the hands of the user. Locate yourself in one of the four groups mentioned. Now look at your possible outlets and keep in mind the anticipated increase in your own group which means your future competition, and keep in mind the anticipated increase in the selected outlets for your products.

Don't Worry About 'Invaders'

Don't underrate the new factors who are entering the field, but don't lie awake nights, chewing your fingernail, wondering what they will do to you. If you were one of these new factors you would look over your list of possible sales outlets and decide on a sales program. You would find that there were a hundred or a thousand active prospects at the present time, some of them pretty well established, well-known and well-thought of. You realize that there will be an increase in these figures, but you would also know that the increase will come from those who are not now engaged in the business of refrigeration.

I am going to guess that you are also wise enough to know that a firm unfamiliar with refrigeration is going to have a real struggle for a few years. These new firms will be a strain on the manufacturer, who is himself new at the business. Knowing all this, I would expect you to say:

"Well! We can't expect to go out and get all the other fellow's customers away from him. We don't want to start out with all new-comers either."

Our best bet is to get a nucleus of desirable established customers and spread out from there. We will go to them with an offer that will be too attractive to turn down. We will give them a contract that assures them of our continued recognition after we have established ourselves as well as during our growing period."

I don't think this analysis is farfetched, and I do think it will achieve the desired results. As we approach the end of the war, many are going to be acutely aware of the dark brown taste in their mouths.

On The 'Doghouse' List

Hundreds of "betweeners" have a "dog house list" that rivals that of the United Nations. The new factor entering the field will not have to explain the skeleton in his closet or defend a real or fancied breach of faith.

Representative committees from various industry groups hold occasional meetings. These committees explore the possibilities of mutual cooperation and the means of improving inter-group relations. The interest attached to such meetings is largely limited to those attending.

We are inclined to be business isolationists who take little interest in group problems unless they are our specific problem as well. This leaves us open to the charge of self-interest which we will not want to bear in the postwar period.

Your customers' problems are your problems. You must convince him of this by your **policies,** not by your sales literature. Missing an opportunity to enter into any discussion which involves the business of your customer is failing to cultivate the ground you hope to reap.

Manufacturer on Wholesalers

I myself have heard manufacturers who did over half of their business with wholesalers express the view that it costs the customer more to buy through a wholesaler. By his own words he believes that half of his distribution is founded on unsound and uneconomical principals.

Can such a manufacturer retain his wholesale accounts in the face of new competition in the postwar period? I do not intend this to be a criticism of any chosen method of doing business. I use the illustration to point out the necessity of adopting a plan that you feel is sound, and one which you yourself believe in. To be a good one for you, it must be a good one for your customer and for his customer. If it can't stand this test, it won't survive the postwar expansion period.

Many of us will have to alter our policies. Let's not wait until we are forced into it to save our skins. Let's do it now and build closer relationship with what customers now remain with us.

I don't think the manufacturers are the only ones who will hear the skeleton rattling in their closet after the war. I think the man who has had the job of trying to keep the nation's machines in operation has had the worst beating of any of us.

The manufacturer bemoans the fact that he can't ship the wholesaler a $25 order for parts, that he hasn't the time to answer inquiries or wires. His sympathy is touching, and you are deeply impressed but also inclined to wonder if his sorrow is not adequately assuaged by orders from other sources. The only reason the wholesaler can't be tarred with the same brush is because he can't quite get his business back to prewar levels.

Packaged Unit 'Bogey'

The wholesaler will not be without his problems. Much adjustment will be necessary. I said earlier that new factors entering the field would of necessity be creating new wholesale and dealer accounts with no previous mechanical refrigeration experience. They will undoubtedly design their produce with this in mind.

Completely assembled package type units that require no mechanical installation will be popular. The theory being that they then have a sales problem rather than a mechanical problem to cope with.

A good percentage of each wholesaler's business is derived from the sale of parts necessary to construct a commercial installation in the field. Increased use of hermetically sealed and self-contained units will greatly reduce this type of sale as well as the sale of repair parts.

In spite of this, I totally disagree with those who would view this with

(Continued on Page 10)

Small Says 'Old Type Distribution' May Undergo Some Drastic Changes

(Concluded from Page 9, Column 5)

trepidation or alter the course of this development. There has been no substitute for balancing the load of a refrigeration system.

Self-contained units will have a place of honor and respect, but their advantages are also their weakness. The design which aids in their freedom from service makes emergency repair difficult or impossible. Their small wattage motor makes them economical in operation, but has no surplus power to pull down a sudden load, such as might be caused by a power failure.

The "take it out yourself and send it back to the factory" idea has been very successful for domestic boxes, but 300 lbs. of meat will never wait for the express man to deliver the exchange unit. The butcher with a packaged walk-in cooler unit can never add a small low temperature cabinet to it.

The very nature of many commercial type installation requires flexibility that cannot be found in the package type of units referred to. It is not my purpose to belittle the prospects of those who believe in the possibilities of this type of equipment. I believe it is coming and with it an expansion of the industry that we will all share in. I am pointing out to those who "view with alarm" that such units will not replace what we have now, but will add to it by finding new and useful applications of their own. The wholesaler will have to analyze the future trend and perhaps flex his habits a bit to avoid being caught with too little too late.

More Items Might Be Sold

Among the wholesalers are the Refrigeration Supply Jobbers present today. The products they now handle are divided into about 10 general classifications. The average sale by groups is about $20. This figure will vary some but can be considered representative.

I have a list of 18 other groups of products which the Refrigeration Supply Jobbers generally do not sell. This list includes items now on the market as well as some that will appear as soon as the war ends. The average sale by groups on this list would be $150.

Stop and think for a moment what this amounts to. The jobber could add 18 new groups of products whose average sale was 7½ times greater than that he now enjoys. He could sell these 18 types of products to the same outlets he is now selling the 10.

If some of the products are now on the market, why hasn't he already taken advantage of these possibilities? The answer is quite simple. Many of these products have followed a distribution pattern much older than the Refrigeration Supply Jobber, much older, in fact, than the jobbers themselves.

I believe that any distribution system that old is due for a change. I feel that new elements will directly or indirectly bring about fundamental changes in many lines of distribution.

I believe that the members of the Refrigeration Supply Jobbers Assn., in the not too distant future, will recognize the limits placed on their title by the word "Supply." It would not surprise me if they became the National Refrigeration Wholesale Assn. or something else similarly descriptive.

Each wholesaler must very soon decide on his future. I doubt that they are of a uniform mind as to how best to do this. I know that the manufacturers' views on how the wholesaler should do it are as far apart as the poles. One manufacturer in discussing the bulletin relative to jobbers and manufacturers, sent out by Rema, expressed a hope that no jobber would go in for the sale of complete unitary equipment.

Need Engineering Talent

Another expressed the opinion that jobbers, to succeed, would find it advisable to place competent engineers on their staffs. These viewpoints are interesting and should be expanded because I believe there is a lot to be said on both subjects.

The postwar period will divide wholesalers into three groups. Those who distribute all types of parts and equipment, taking everything that can or may help refrigerate; those who stick to parts as we understand that term, and those in between who are neither fish nor fowl.

Many strong organizations will develop, and many new ones will enter the field in all three groups. The changing trend will result in larger organizations, lower gross margins, increased sales and overhead, larger capital, and new requirements for time contract financing.

Huntington Small, The Thermal Co., St. Paul, is the man who made the "down-to-earth" talk about present and postwar industry distribution policies which is published on this and the two preceding pages. Mr. Small is pictured here addressing one of the sessions at the French Lick meeting.

There will be a greater spread between the businesses of the large wholesaler and small wholesaler.

The dealers and mechanics in the field have had the least benefit from war prosperity, and the most difficult to overcome. Most of us have looked out for ourselves first and expected the other fellow to do the same. Unfortunately, the dealer and service organizations were least able to do so, through no fault of their own. I have little in common with those who look upon the serviceman, be he "back alley," independent, or just a mechanic on someone else's payroll, as an inferior being who is necessary—yes—but not too important.

I hear talk about how the industry developed the serviceman. Yes—perhaps they did develop some, but I don't recall their developing any for purely educational purposes. I'd say the serviceman developed in spite of the industry, and then took a very great part in its development. Many hundreds were self-educated the hard way and had to bootleg parts to remain in business. They were chased from the holy temples and banned from the market places.

Yet, today, these men are respected members of the industry. They grace the conference tables of the R.S.E.S., the N.R.S.J.A., and the Rema. They are respected dealers and distributors of those same organizations who formerly cast them out.

Servicemen 'Move Up'

Many men now working to service our equipment will move up to take their places at these same tables in the near future. They will be those who anticipate and adapt themselves to their postwar problems.

If changing equipment designs lessen the work of installing, if repair work begins to sag temporarily, the serviceman need not feel discouraged. Many a man has been kicked upstairs, and this may be his opportunity. No one has as great an opportunity as the serviceman to gain the confidence of the user of refrigeration equipment. He is often the first to learn of the customer's plans for expansion. He often sees a need for additional equipment before the customer is aware of it.

Some servicemen are handicapped by the lack of sufficient knowledge to properly engineer a commercial job. They may lack the confidence to attempt a sale. To such a man, the postwar development of self-contained units may be as manna from Heaven. He can look to the future with the utmost confidence if he will but take advantage of his opportunities. There will be a place for every serviceman including those who have been newly trained while in the armed forces.

I have given you my picture of postwar problems affecting three groups. Only the future will provide the solution. There are, however, some problems we have in common.

What's Wrong Right Now

First we have the problem of helping each other. This was a depression problem—it was a prewar problem, and it will be a postwar problem. If we spent half as much time figuring out how to make money for our customers as we do trying to make it for ourselves, we wouldn't have to make it for ourselves because it would just naturally be there.

You must provide your customers with both the means and methods to operate profitably. You probably feel that you are already doing this. To some extent—Yes! but to the fullest extent—No!

It is still too costly and too difficult to identify parts for repair work.

There is too much sales literature of little value, and too little engineering information of much value.

We are too ready to accept a bad situation merely because it has existed for some time.

We, as an industry, do not provide a sufficiently wide range of products to keep most of our customers in business. New factors entering our industry recognize this failure on our part, and are going to use this to their advantage. If any of you are looking for postwar products, you might make a note of this.

We take "eye appeal" very seriously in designing the packages for our products. We should give at least as much thought to the utilitarian uses of that package. Many improvements could be made.

This doesn't cover all the possibilities but sketches some that should lead you to think of many others I have forgotten to mention.

We all spend money to get business, but few of us spend money to keep business. A little spade work cultivating deep around the roots now might be a good protection if a drouth should come. It wouldn't hurt even if there was no drouth, and you'll never have another period when spade work can be done so cheaply.

For 12 years I have watched this industry pass through a number of phases. Through all of them, its growth has been uninterrupted. As the industry grew, so did each individual in it. The industry has made money, and so have we as part of it. This was true before the war as well as during it.

If some individual had been as kind to us as has this industry, we would not rest until we had found a means of showing our appreciation. Because an industry has no person—even though it may have personality, we seldom give a passing thought to what we owe it—how we might repay our debt or how we could provide for its future. We could do all these things, and I do not feel it amiss to suggest that it be done, and how it might be done.

Proposes an 'Institute'

I propose that the members of this industry establish and maintain a technical laboratory for the purpose of studying the technical problems which now and may later confront us. Among these would be the standardization of engineering data; the standardization of design where individuality is not effected or important: Research on problems of moisture control, of heat transfer, the effects of air velocities on perishable products, the broadening and tabulation of latent heat data on many new metals and products, and scores of other pertinent subjects that affect each of us; including the development of a recognized unbiased text book on practical refrigeration engineering and service.

I don't propose to enlarge upon this because this is neither the time nor the place to do so. I do not intend to wage a one-man campaign for the establishment of such a laboratory. To be successful, it should be the joint interest of each and everyone in the industry. Its cost could be borne without hardship on any group or person.

Regional Committees Formed to Support Locker Group's New 5-Point Program

DES MOINES, Iowa — Five-point program to guide its activities for the 1943-44 season was mapped out by the board of directors for the recent fifth annual convention of the National Frozen Food Locker Association held here.

Winning the war, broader organization, improved educational facilities, expansion of the locker industry, and increased publicity for the frozen food locker field are the major points in the program as outlined by Albert Guggedahl, who has been set up as full time executive secretary of the association with offices in the Old Colony Bldg., 10th and Grand avenues here.

BACK FOOD PROGRAM

"The locker industry," so states the program, "will continue to coordinate its efforts and lend its wholehearted cooperation to all governmental and civilian war agencies to Victory. Our efforts can be directed in many ways. We are in position to lend special assistance and valuable contributions to the food program, and we dedicate our efforts especially to the 'Food Fights for Freedom' campaign during the coming year."

For the purpose of improving its organization and coordinating its activities, as well as promoting regional conferences and state meetings, five regional divisions and regional committees have been established by the national board of directors.

Chairman of each regional committee is a member of the executive committee, with the committee membership made up of national directors within each region and officers of state associations.

Educational program of the association will emphasize the need for better packaging, lower quick freeze temperatures, zero temperatures for storage, kitchen facilities for customers, and improved sanitation. Improved temperature recording and controls will, in some instances, require changes in state locker laws, and national, regional, and state associations will cooperate to obtain new regulations as required, it was said.

SEEK MORE MATERIALS

The frozen food locker industry expects to receive its share of critical materials when the progress of the war permits their allotment to civilian use because of its contribution to the food program.

As part of its program, however, the national association intends to make certain that the proper government agencies receive the facts pertaining to the necessary expansion of the locker industry, including the building of new plants and constructing additions to present facilities.

Fifth point of the program stresses the need to bring the locker industry before more of the public. With people more food conscious than ever, the time is ideal for increased publicity, the locker association believes.

"The time is here when every locker operator should tell his story of service, of conservation, and of preservation of foods," the association contends. "The national association will plan a publicity program during the year, a program of general public interest and one that will be helpful to the locker industry throughout the country."

NEW OFFICERS CHOSEN

President George O. Schlageter of Illinois heads the new officers of the association. First vice president is Louis R. Uhring of Missouri; second vice president, C. G. Holme, Jr. of California; executive secretary, Albert Guggedahl of Iowa; and treasurer, L. T. Potter of Iowa.

Board of directors includes Howard E. Ullery, Howard J. Knapp, E. B. Ballinger, A. F. Norton, and E. B. Nelson, all elected for three-year terms. Serving for two-year terms are L. E. Bothell, J. G. Wilkerson, N. E. Vandyke, Geo. A. Thomson, and C. C. Condit.

One-year members of the board include Marvin Wilde, A. W. Simank, Ben Hansen, H. G. Godshall, F. Leon Bruder, and A. J. Moen. Horace L. Titus is an ex-officio member of the board.

The five regional committees, and the states they represent, are as follows:

Region I: (California, Washington, Idaho, Oregon, Utah, Arizona, and Nevada). C. G. Holme, chairman; J. J. Hoey, Maure Hurt, C. C. Condit, A. W. Oliver, C. E. Reiman, E. B. Ballinger, Don D. Stewart, Marvin V. Wilde, Leland J. Hansen, and Joseph S. Bennion.

Region II: (Minnesota, North Dakota, Montana, Wyoming, Colorado, Nebraska, South Dakota, and Iowa). L. T. Potter, chairman; J. E. Waggoner, E. B. Nelson, D. R. Card, W. R. Selby, A. J. Moen, B. A. Thomas, W. H. Hasebroock, Roy G. Myers, Ray R. Farquhar, L. L. Belcher, C. O. Templin, and H. L. Titus.

Region III: (Missouri, Kansas, Oklahoma, Texas, New Mexico, Arkansas, Louisiana, Mississippi, and Alabama) Louis R. Uhrig, chairman; W. M. Ratcliffe, F. H. McIntosh, Geo. A. Filinger, N. E. Vandyke, E. W. Simank, Ed. Petrikowski, J. G. Wilkerson, V. B. Shaw, Ray G. Purnell, and A. F. Norton.

Region IV: (Michigan, Illinois, Kentucky, Indiana, Wisconsin, and Tennessee). Geo. O. Schlageter, chairman; C. J. Truckenbrod, Dana Cryder, Frank A. Gougler, F. Leon Bruder, Howard J. Knapp, J. M. Card, Howard E. Ullery, B. L. Trabue, M. C. Reppen, P. W. Frett, L. E. Bothell, Burgess Askew, Jr., and Geo. Thomson.

Region V: (Ohio, Pennsylvania, New York, Connecticut, New Jersey, Maryland, Virginia, and West Virginia). Harry Flory, chairman; A. L. Sprague, H. F. Godshall, Miss Kathryn Wilson, M. W. Finney, Mrs. Caroline H. Cheney, Mrs. Ben Hansen, W. G. Fyler, and R. M. Joyce.

Examining Foreign Markets

Postwar markets for electrical appliances abroad were studied and prognosticated by this group at the National Foreign Trade Convention in New York City, Oct. 27. Seated (left to right), Dempster McIntosh, President, Philco International Corp.; a Department of Commerce representative; William E. Knox, Director and Assistant General Manager, Westinghouse Electric International Co.; James A. Bentley, Vice President, Carrier Corp.; and R. L. White, President, Landers, Frary and Clark. Standing (left to right), George F. Taubeneck, Editor and Publisher, Air Conditioning & Refrigeration News; Raymond C. Cosgrove, Vice President and General Manager, Crosley Corp. Some of their speeches before the convention will appear in later issues.

Jobbers Told How to Re-rate Orders, Given Other Hints on Priority Procedure by WPB Authorities

FRENCH LICK, Ind. — "Re-rate your old orders with the new ratings given in the revised P-126," the N.R.S.J.A. members were told by WPB officials at their association meeting Oct. 28.

By re-rating the orders the manufacturer is given a better rating pattern to apply for the materials he needs and thus he may be enabled to make more equipment available and to shorten delivery time.

Best method of re-rating, it was said, is that prescribed in Priorities Regulation No. 1. By the use of the PD-4Y described in Regulation No. 1 the person ordering can apply the new rating but use the same date as the original order, thus not losing any ground on the "position" of his order in the producer's file. The alternative method is to enter a new order with a higher rating and void the old one, but this could possibly lose the advantage of the earlier dating of the order.

The WPB officials made the following comments about some of the regulations and orders:

Okay on 'Complete Assemblies'

The amended P-126 now provides for ratings for "complete assemblies," which in the jargon of the industry means "condensing units and coils" or "highsides and lowsides."

There is a restriction against the replacement of complete highside or lowside assemblies in Order L-38, but there is also an exception in it which provides that the restrictions shall not apply to those entitled to apply ratings under P-126.

Order L-126 now provides for steel for compressor bases or units under 3-hp. and also permits the manufacture of both air and water-cooled units in the 3-hp. sizes.

Production of mechanically refrigerated water coolers is still limited to units made for shipboard use only, but efforts are continuing to get an okay on some production for war plants.

There is some hope of permitting the use of copper for coils and brass for valves and fittings by early 1944.

A shortage of "reach-in" commercial refrigerators has developed, and a program is being considered for the production of four or five standard sizes of reach-in boxes.

A program for refrigerated locker plant construction and expansion much similar to that in effect this year is likely for 1944. However, the WPB officials emphasized the point that the War Food Administration sets the rules under which applications are accepted, and also processes all applications for locker plants. All applications, protests and correspondence about locker plant construction should be addressed to the War Food Administration.

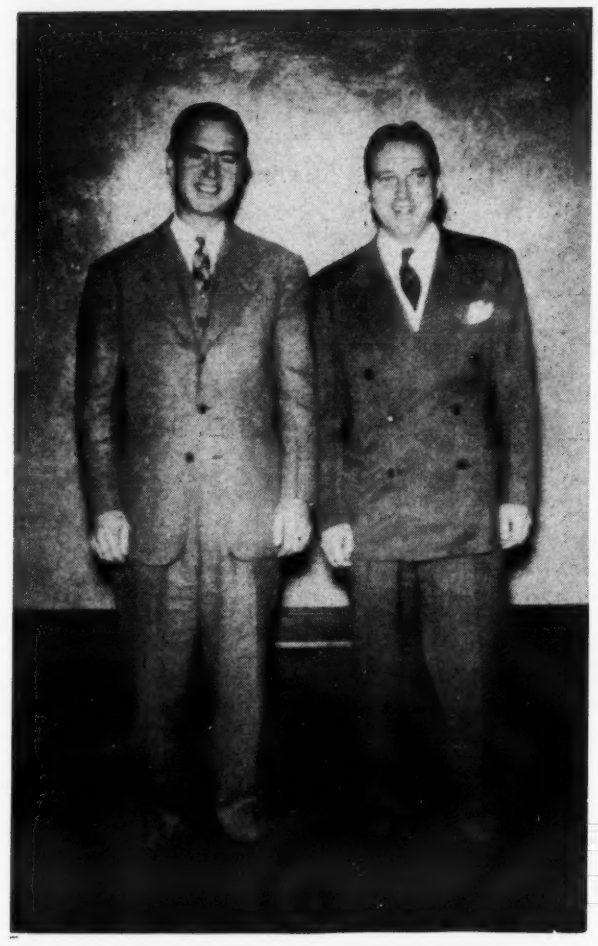
There is a strong possibility that production program for farm freezer-storage units may soon be developed. Various government agencies designated to look after the farmers' interests seem inclined to push it, and WPB is expected soon to establish a Farm Freezer Advisory Committee. However, there remain serious questions as to whether the manpower and materials needed for such a program can be allocated.

More Repair Materials Sought

A program calling for a considerably expanded use of materials for refrigeration repair and maintenance parts in 1944 has been prepared for consideration by the WPB requirements committee.

The Refrigeration Industry Advisory Committee is to make a study to determine the need for new refrigerated fixtures to take care of essential refrigeration needs.

To expedite materials to manufacturers and help break bottlenecks in production, a new Operations Division is being set up in the Refrigeration Section of WPB to handle matters of the production of refrigeration equipment for military needs, which constitutes some 90% of the present total production of refrigeration equipment.



These are not the "Smith Brothers" but they are nevertheless two Smiths who play an important part in the lives of those in the refrigeration business today. Left is Frederick Smith, Chief, Special Equipment Branch, General Industrial Equipment Division, WPB. The Refrigeration Section is part of this Division and Sterling Smith (right) is Chief of the Refrigeration Section. Picture was taken by Irving Alter at the French Lick meeting.

Can Help on Gasoline

The Refrigeration Section of WPB will give assistance to refrigeration servicemen in getting them the proper amounts of supplemental gasoline rations. Contact has been established with OPA officials in Washington. Servicemen who fail in getting help by appealing to their regional OPA offices should make contact with Rod Tait at the Refrigeration Section headquarters in Washington, D. C.

In making use of the WPB Form 547 (formerly PD-1X) the jobber can put a number of different items on the one form. It isn't necessary to use an individual form for each item. The 547 forms are now being processed in from four to five days.

Problems of distribution are handled generally by the Wholesale and Retail Trades Division of WPB, which answers to the Office of Civilian Requirements. This function is being expanded and it is possible that a "Refrigeration Distributors Advisory Committee" may be formed. One of the plans of the Wholesale and Retail Trades Division is to push the idea of having a certain amount of a manufacturer's production earmarked for civilian use.

It will be advisable for all jobbers to keep up their inventory records, for they may be requested at any time by WPB agencies.

How to Use WPB 547

Form WPB 547 (old PD-1X) was designed to replace stock on the shelves of distributing firms which were sold without priority. Don't extend rated orders and then file a WPB 547 for the same item. Such a practice is unfair and hurts the old program. If in filing a WPB 547 you certify that you aren't extending ratings for such items you will get a better break when the 547 form is processed.

Following the comments by the WPB officials, a question-and-answer period took place, and the following were among the principal questions asked and answered:

Q. Will more cylinders for "Freon" be made available.

A. A program is being set up with the Container Division of WPB to assure a monthly allocation to make up for losses in cylinders.

Q. In using WPB 547 (old PD-1X) should we make application for all the items in our stock?

A. No. WPB 547 form should be used only for those items on which a rating can be obtained under the purposes of the order (such as parts for household refrigerators). Such parts as cooling coils cannot be rated when applied for on the WPB 547. Also, on many items it is possible to obtain higher ratings by re-extending the customer's priority.

Q. Is there any limitation on the size of complete assemblies that can be replaced under the terms of the amended P-126 order?

A. No, not if it is certified that they are beyond repair.

(Concluded on Page 13, Column 1)

Questions-and-Answers on Refrigeration Priority Matters Answered by WPB Men

(Concluded from Page 12, Column 5)

Q. Do refrigeration supply jobbers still have to file a list of their "Freon" customers each month?

A. No, this is no longer necessary, under the present method of allocation.

Q. Can a refrigeration serviecman have a stock of "Freon-12" for emergency use.

A. Yes.

Q. Why is it necessary to channel all Army-Navy orders for "Freon" through the Pennsylvania Engineering Co.

A. The Army and Navy have "open end" contracts with this company, and all releases of "Freon" for Army-Navy orders are made through this one agency.

Considerable discussion developed around this question, and it was finally agreed that the problem of jobbers selling "Freon" to Army and Navy establishments involved (1) getting a Class I allocation from the producer of "Freon" and (2) obtaining the same price rebate setup as the main Army-Navy sales agency is given. The jobbers may attempt to get some action on this matter.

Q. What can be done about orders rated under WPB 547 which aren't rated high enough to get the equipment?

A. Write in and tell the WPB agency that supplied the rating that it isn't high enough. If the story is told in detail, the order will be rerated, and given preference over those orders of a later date.

Q. Are any attempts being made to make it easier to obtain copper tubing?

A. Yes, it is realized that the present setup isn't satisfactory. An attempt is being made to permit ratings for copper tubing to be made on application by WPB 547, but there is no assurance that this can be done.

Q. What kind of ratings are now available to ice cream companies, etc. who maintain their own service departments, now that they are excluded from applying the ratings under P-126?

A. Such concerns should extend ratings under CMP Regulation No. 5 according to the various schedules set up in that order. For example, the retail stores of a chain store concern can apply a AA-5 rating, while the food warehouse of the chain store concern can apply a AA-1 rating.

Q. Is there any prospect that more gaskets for refrigeration use will be made available?

A. Prospects for a greater supply of more gaskets are not too bright. Most of the gasket manufacturers have heavy contracts for war items, and furthermore it is a considerable problem to get the liquid rubber used in making gaskets. Jobbers reported gaskets as obtainable from some new suppliers such as Larco Refrigeration Products in Milwaukee.

Fedders Rewards Assembler For Water Cooler Idea

BUFFALO—Michael J. Kainz, an assembler at the Fedders Mfg. Co. here, has received an award from the company for what the firm called "an important suggestion having postwar application in the design of electric water coolers."

"The future of the security of labor and management is on constructive ideas," Executive Vice President Warren E. Detenbeck said in presenting the awards.

388 Purchasers of Refrigerators In One City Get Price Refund

WELCH, W. Va.—Four Welch, W. Va. merchants recently refunded a total of $7,954 to 388 purchasers of new and used electrical refrigerators following an investigation of overcharges by OPA, reported Chester Harmon, chairman of the Welch price panel of the war price and rationing board.

The overcharges, varying from 50 cents to $108.50 were on sales made in the 16-month period from March 3, 1942, to last Aug. 1.

Carl C. Drewry, a field representative for the OPA, who negotiated with the merchants to obtain the refunds, said the refunds were made in the form of checks or credit memorandums and in virtually all cases came as a surprise.

Houdaille-Hershey Plant Gets Additional Award

BUFFALO — In addition to the Army and Navy "E" Award, the Oakes Products Division of Houdaille-Hershey Corp. has been awarded the War Production Citation by the Ordnance Department Industrial Integration Committee for Tank Tracks.

This is in recognition of work done by the Oakes Products Division of Houdaille, during the period from Aug. 3, 1942 to March 31, 1943. The citation states: "When Tank Track production was critical, the Oakes Products Division of Houdaille-Hershey Corp. co-operated with this committee, made an outstanding engineering contribution, and attained an unusual efficiency of production, making it possible to meet the required (production) schedules."

Refrigeration Supply Jobbers Ponder Problems

Members of the National Refrigeration Supply Jobbers Association get their questions on priorities and other relations with government agencies answered at their French Lick meeting. Sterling Smith (second from left) Chief of the Refrigeration Section of WPB, and George Hench, Acting Chief of the Wholesale Plumbing and Heating Section of the Wholesale and Retail Trades Division of WPB (extreme right) were the men from Washington who handled the questions. Others in the picture are Mary Silvers, assistant to the secretary of the N.R.S.J.A.; and Harry Alter, the Harry Alter Co., president, N.R.S.J.A.

Directors of the N.R.S.J.A. who were present at the French Lick meeting pose for their picture. Left to right: Mary Silvers, assistant to the secretary of the association; R. M. Graves, Atlanta; Fred Hovey, executive secretary; Robert W. Sheperdson, Worcester, Mass.; Harry Alter, Chicago; H. W. Small, St. Paul; Harold McCombs, Denver; Alex H. Holcombe, Jr., Philadelphia; H. S. McCould, Pittsburgh; George J. Roche, Baltimore.

Air Conditioning & REFRIGERATION NEWS

Established 1926 and registered as Electric Refrigeration News

F. M. COCKRELL, *Founder*

Published Every Monday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates
U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: $4.00 per year; 2 years for $7.00. All other foreign countries: $6.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Send remittance with order.

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VOLUME 40, NO. 10, SERIAL NO. 764
NOVEMBER 8, 1943

They'll Do It Every Time

By Jimmy Hatlo

Big Opportunity In Exports

REFRIGERATION and air conditioning comprise one industry which has an excellent chance of getting its current tax dollars back from Lend-Lease operations.

Explanation of this odd proposition is that Lend-Lease, the Army and the Navy, are advancing the promotion of foreign markets for air conditioning and refrigeration anywhere from 10 to 20 years by virtue of the "sample" installations they are making in lands which need air conditioning and refrigeration most, yet which hitherto have enjoyed their benefits least.

ONLY IN U.S.A. HAS COOLING BEEN WIDELY USED

The United States of America is the only nation in the world which has made any large-scale application of refrigeration to the art of better living. We have in our country the only refrigeration industry of real size in the world. And so far, our nation has provided the only quantity market.

Reasons for this situation are many. Our diet calls for adequate supplies of health-giving, vitamin-loaded, perishable foods. The diet of vast portions of the world has not been lifted to this point. Second, our industrial development has provided a plenitude of refrigeration equipment, whereas that of most other nations has been too backward to make such equipment available.

LEND-LEASE, ARMY, NAVY TAKE REFRIGERATION AROUND WORLD

You have to see something, to know what it can do for you, to want it. And right here is where Lend-Lease, the Army, and the Navy enter the picture. In darkest Africa, in remotest South America, in Iraq and Iran, in the Near East, the Middle East, and the Far East, they have made extensive installations of refrigeration and air conditioning equipment for the use of our own men.

The natives of foreign lands are now being exposed to refrigeration and air conditioning, and are learning how much they like it and how much it can do for them. It would have taken years—and tremendous promotional investments on the part of our manufacturers — to begin to match the educational job which this unwitting "cultivating of the market" has brought about—purely as a necessary adjunct of our tremendously expensive and expansive war effort.

THE NATIVES ARE 'NUTS' ABOUT AIR CONDITIONING

Reports filtering back from our Army posts abroad reveal that the natives are "nuts" about air conditioning, about cold drinks, about our refrigerated foods. Inquiries to American manufacturers are multiplying as these seedlings continue to grow and bear fruit.

In tropical countries—where refrigeration is needed most and is found least—the wave of desire for our refrigeration and air conditioning equipment has become so tremendous that export men in this industry can hardly believe the evidence they see.

FOREIGN MARKET UNFOLDING AS THE 'PROMISED LAND'

For years they have been battling for a foothold, for recognition, for some clue to the penetration of that baffling inertia to new ideas which has made their going so tough. And now they see the market which was always there unfolding before their eyes like Moses and the Promised Land. Big difference: they expect to *enter* the Promised Land, whereas Moses could only look at it.

Treasurers are casting jaundiced eyes at these optimistic market forecasts, and are asking: "But where is the money coming from? How will these foreigners be able to pay for our products?"

OTHER COUNTRIES' BIG TRADE BALANCE MEANS MORE EXPORTS

Well, a study of dollar balances now held and a-building in our best markets for refrigeration equipment reveal an interesting reversal of position. The debtor nations have in many cases become creditor nations, as far as we are concerned.

South and Central America, South Africa, and some of the eastern nations have been building dollar balances quietly but impressively as a result of our huge purchases of their raw materials, and our tremendous investments in developing their resources. They will have the money to pay for the goods when we are able to ship them.

But, you may say, isn't this strictly a short-term proposition? Won't those dollar balances run out rapidly, when we no longer need such quantities of their raw materials? Doesn't the fundamental fact of diet differences preclude any real use of refrigeration in the less well developed nations of the world?

FROZEN FOODS MAY CHANGE EATING HABITS OF WORLD

Right there you run into intangibles, of course; but you also run into an amazing probable: the probability of a revolution in our food production and distribution system. There is not space here to go into the facts of this revolution. But it can be said, briefly, that it has now become possible to market frozen foods in this country cheaper than canned goods or *even fresh foods* of comparable quantity and quality.

Also there is every reason to believe that we have seen only the beginning in the cutting of costs of food distribution through refrigeration and the utilization of frozen foods.

OTHER PEOPLE NOW TASTING OUR SUPERIOR DIET

Our Army, Lend-Lease, and foreign relief people are now and will increasingly cultivate a liking abroad for our superior diet. And refrigeration may make the cost of enjoying that diet within reach of peoples who never could have begun to afford it before.

Export men will find in the expansion of refrigeration and air conditioning utilization abroad a great many secondary benefits. Take air conditioning, for example. Export men, colonizers, foreign development men have always been plagued by life in the tropics. Their efficiency is impaired, they are able to work but a few hours a day, and less than 12 months per year, when they are subjected to the enervating influence of hot climates.

COOLING WOULD MAKE LIFE IN THE TROPICS BEARABLE

Just imagine how much better they will be able to do their job of developing the rich tropical lands—of "exploiting" (to use an unpopular term) the vast productivity of the countries where vegetation luxuriates and man deteriorates—when they can sleep in air conditioned rooms, work in air conditioned offices and factories.

Think, also, of how the development of frozen *cooked* foods will enrich their lives. When abroad, they can take nostalgic joy in eating a steak from Jack's in Chicago, or some of the Atlanta Biltmore's corn-on-the-cob. And when back in this country, they can go down to the frozen foods delicatessen and buy chicken paprikasch from Budapest, or curries from the Taj Mahal hotel in Bombay, or some of that unforgettable lamb ragout from Shepheard's in Cairo!

Such luxurious thoughts for the export man, of course, are but incidental to the main opportunity at hand. Through refrigeration, the Hottentots may even come to *want* a quart of milk a day. And when that time comes, the refrigeration export business will be ready to supply the demands and take its profit.

LETTERS

SERVICE FIRMS QUALIFY FOR 'C' GAS RATION

Modern Refrigeration Service Co.
807 Stewart Ave., Jackson, Mich.

Editor:

I am having some difficulty in securing gasoline to handle service calls. At present I am putting in over 90 hours a week on commercial and domestic service and shop work. The local rationing board here expressed the opinion that domestic service does not warrant gasoline.

Would you advise dropping domestic work? Would appealing to the district rationing office be of any avail. Any assistance you can give me in this matter will be appreciated.

ALMER L. FAIR.

Answer: Most refrigeration service men have not had any trouble getting sufficient gasoline for their needs. However, if your local board won't give you what you need, an appeal to the district office is the next step.

Page 3 of the April 5 issue of AIR CONDITIONING & REFRIGERATION NEWS gives the text of the order granting "C" gasoline rations to firms doing installation and repair work. The fact that you do some work on domestic machines should not bar you from getting a "C" ration.

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

by famed refrigeration aviation engineer and inventor Glenn Muffly, was approved by Kettering and practically every engineer who had a chance to inspect the plans. But somewhere along the line the idea was pigeonholed.

The war might be over now if those weapons had been in quantity production when they could have been. They surely could have prevented the Pearl Harbor disaster.

Henderson Reports

In previous columns we have taken pride in presenting excerpts from the letters of our baker's-dozen boys in service. This week we really have one for you, a thrill-packed account of action in the Atlantic from Sailor Ed Henderson, who is a radarman on a destroyer.

Before enlisting in the Navy Ed was our circulation manager. His wife, Helen, is doing yeoman service for us here at the NEWS, keeping our accounts and watching credit.

We hope you enjoy this eyewitness account of one of the tensest moments in American naval history as much as we did. Take over, Ed:

Eyewitness Thrills

"We had been at sea for two weeks with the biggest convoy any of us had ever seen. It was a mammoth operation of which we were part. We had been told what to expect and most of us expected the worst. We were out to take northwestern Africa, and from the appearance of our task force the operation would be simple or else there would be very strong opposition.

"Battleships, carriers, cruisers, destroyers, mine layers, mine sweepers, tugs, supply vessels, and a host of troop transports . . . plenty of everything . . . a battle fleet at sea . . . stretched out from horizon to horizon and then some; this fleet made up a formidable task force. It was either to face an enemy fleet of similar force or else its formation was to expedite a quick victory, we didn't know.

"As the siren wailed away, I more or less fell out of my bunk as men went swishing by in the dark, all headed for the hatch which led to top side. I turned on the light, squinted, and fumbled around for my clothes, wondering what might be going on up there. This was it. Apparently the opposition we half expected was now a reality. The French were going to fight probably.

Hot Flashes

"I hurried up to the bridge to take over my battle station. It was still dark, and before I had time to orient myself . . . to find out where we were and what was brewing, I saw brilliant crimson flashes off the port beam way out on the horizon followed by flaming projectiles cutting an arc across the sky . . . then a terrific flash as the shells hit their objective. Then came the distant rumble of the explosions seconds later. This firing continued at intervals the rest of the morning, all that day and through the night.

"We found out later that this firing was from our battleships and cruisers which were shooting up units of the French navy as they tried to leave Casablanca harbor.

"Our ship was assigned to help screen a group of troop transports and supply ships from submarine attack. As the action started at Casablanca on the zero hour, we were moving in slowly on Fedahla about 12 miles north of this objective . . . keeping out of range of shore batteries and preparing to land assault troops on the beach. It would be their job to capture enemy gun emplacements and get the harbor under control so that we could move our big ships in and unload.

"Everything progressed with precision until about four in the afternoon. Except for occasional bombing attacks by German and Italian bombers and attempts at strafing by French pursuit planes, we were unmolested. Our big fighting ships had the French fleet well bottled up at Casablanca and our planes were doing a good job in the air.

"But about four o'clock, we were sent into Fedahla harbor to look for mines and to blow them up so that our big ships would be safe when they went in.

"We were still sending assault troops ashore in tank lighters and barges, and as we started moving in cautiously, an enemy shore battery began blasting away at our troops from the other side of the bay. We all knew that soon our ship would be within range of that battery. But we had orders not to fire unless fired upon . . . so our guns were silent and we kept moving in closer and closer.

"Suddenly there were explosions all around us. They must have been using a six inch gun, because the explosions were really shaking us up momentarily. However, it wasn't more than a few seconds before we had all of our guns lobbing shells right in on top of the enemy.

"I clamped myself to my chair and hung on for dear life. Each instant the enemies' shells exploded closer . . . they were getting our range. Just then something hit my steel helmet with an awful whack. For a second, I thought I must be mortally wounded. But no, it was just a heavy ash tray that was hanging on the bulkhead above my head. It had been jerked off by the explosions and hit me squarely. The incident started me laughing . . . and I don't think I was sober until we were out of the harbor again.

"It didn't take us long to get out of there, but on the way out, we did silence the enemy's battery. We looked ourselves over to be sure that we were all there, and I was surprised to find that we had been hit. One of the enemy's shells was a dud . . . and it went through our afterdeck, a couple hatch covers and a barbage can without exploding. I knew then how lucky we were.

"Everything was quiet after that . . . at least for a while. The big transports moved in and anchored; several destroyers were assigned to screen them during the night, and we were allowed to anchor on the outside. It was a peaceful evening. Not even the distant explosions of gun fire were to be heard. The sea was calm and the air was clear. The brilliant African sun was fading in the west, throwing its rays against the broad expanse of the Atlantic and the fleecy clouds overhead were beginning to display their evening colors as I went below to enjoy a good meal for the first time that day.

"With all the excitement and considerable shock, the boys were quite light-hearted at mess that evening. Nearly everyone had an amusing story to tell of their experiences that day . . . and, of course, there were as many versions of the action as there were men at the table. Truly, the mess table is one place where a man has no chance of remaining sullen, homesick, or afraid. Some one or two will always keep the rest laughing, even under such dangerous circumstances as this."

Future Markets For The Refrigeration Industry

By K. M. Newcum, Vice President, Superior Valve & Fittings Co.*

That the markets of the future for the refrigeration industry are destined to be tremendous is a foregone conclusion.

Just as soon as merchandise is available, millions of families will buy new home refrigerators; thousands of retail food merchants and restaurant owners will buy millions of dollars worth of refrigerated display and storage equipment; and merchants, professional men and office owners by the hundreds will buy air conditioners in the ⅓ to 5-ton range for their stores, restaurants and offices.

There also will be a ready market for large quantities of ice cream cabinets, water coolers, beer and beverage coolers, refrigerated vending machines, and other similar products, which prior to the war, merited an important place in the dollar volume sales picture of the refrigerated industry.

Industrial refrigeration and air conditioning equipment which has contributed so largely to increased production of food, steel, synthetic rubber, high octane gasoline and numerous implements of war, should hold for the industry a bright outlook, for at this stage of development the surface has hardly been stratched.

Comfort coolers for the home, at least of the conventional self-contained room cooler type, still seem to face an uncertain future. Home cooling in conjunction with the heating system might be the solution. This market, however, is being given its due attention by the planners and researchers—and the vast possibilities of radiant cooling are not to be overlooked.

Many additional locker plants will undoubtedly be built just as soon as equipment is available, although some interference seems inevitable from individual freezing and storage units.

Excitement Over Home Freezers

If postwar sales come anywhere near the predictions of most everybody in the industry, millions of so-called "deep freeze" cabinets will be sold by distributors, dealers, service engineers, locker plant owners, farm cooperative, and God knows who else, who will be waiting with their trucks at the end of production lines to "grab" the "golden eggs"—these priceless jewels for which there now exists an unprecedented consumer demand.

The fact is, Wayne Carve, Editor, Locker Publications Co., states in an enlightening article entitled "The Home Locker," which appears in the September and October, 1943, issues of "Refrigerating engineering," that he is "willing to go on record" in prophesying that the sales of home frozen food storage units of one kind and another will easily total a million within two years after the end of the war or when conditions again make their unrestricted manufacture and sale possible.

Our industry is young and ambitious, yet it represents a substantial capital investment and is responsible for the employment of a great number of people. Therefore, its postwar planning should attempt to view the consumer demand as it will exist when all channels of distribution of all kinds of consumer goods, clothing and food will have returned to normal.

Watch Buying Habits

People are slaves to habit, and habits are most persistent. To believe that the peacetime habits of a substantial percentage of consumers will have materially changed during our short sojourn in a rather generous wartime economy, is folly.

Certainly thousands of families on the farm, in the suburbs and in town, will own freezing and/or storage chests of one type or another, just as soon as they can beg, borrow, buy or steal them. Hence immediate postwar sales should soar—and then the curve can be expected to drop sharply and level off against sane consumer buying when the consumer can once again get what he wants, when he wants it.

The sales should then take a gradual upturn, supported by extensive sales promotion aimed at gradual changing the buying and living habits of the American people.

There are no doubt many who will disagree with my apparent pessimism regarding the postwar sales possibilities for these "deep freeze" units. I do not deny that real possibilities exist, but we should know from experience that it took a lot of doorbell ringing to have sold the housewives of America enough home refrigerators to make it the really big business that it now is, and to get the public in the habit of coming in to "buy" a refrigerator rather than having to be "sold."

Over-Optimism a Danger

It therefore seems to me that too many manufacturers are far too optimistic about this freezer chest business.

Indications point toward an overproduction and a mad scramble for the business, with inevitable failures—and even bankruptcies—on the part of those who may have placed all their eggs in one basket.

Business failures and bankruptcies directly concern this group of equipment, parts and supplies manufacturers. Your credit manager might well consider this possibility.

Bear in mind that postwar readjustment will in itself be a major problem because much of our working capital may be tied up in cancelled war contracts. Certainly we don't want to stake too much of what is available on too many manufacturers of freezer cabinets unless they have something else to sustain them after the sales curve has taken its predicted sharp drop "back down to earth."

Present estimates indicate bona fide orders for between four and five million home refrigerators, just to satisfy the urgent replacement and new home demand resulting from the war period of non-production. Because this is a tried and proved market, the industry can stake its working capital and make good its estimate of reemployment or retention of present employes.

Newcomers Rumored

Rumors have it that a few very large and "well heeled" corporations are all set to make their debut into the household refrigerator business come peace and the active market that is certain to prevail.

Newcomers into the household refrigerator field might conceivably bring to this group some large quantity business on condensing units, condensers, evaporators, controls, hardware, and the like.

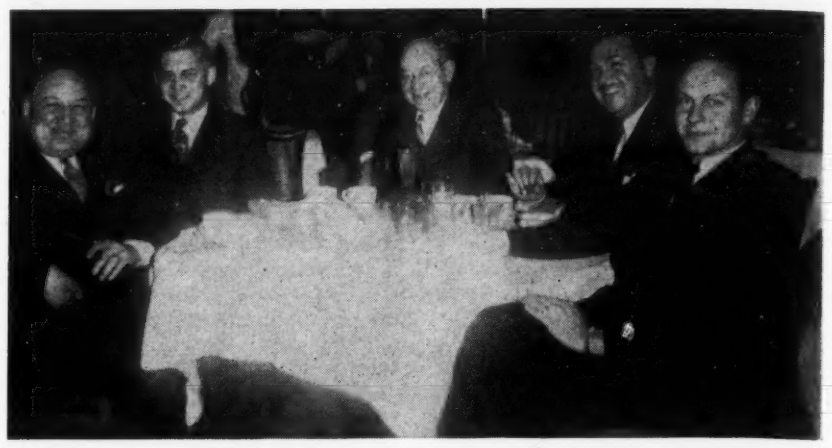
Thus, for the industry in general, the household refrigerator business should be bigger and better than ever.

Commercial refrigeration for the preservation of food stuffs in retail markets, restaurants, hotels, taverns and the like, should be in heavy de-

(Concluded on Page 17, Column 1)

*Address before the meeting of the Refrigeration Equipment Manufacturers Association, Oct. 28 at French Lick, Ind.

Dinner Brought Everyone Together at French Lick



There were no frills at the "banquet" at the French Lick meeting, but it gave those attending the various meetings to get together for some informal discussions. At this table are pictured B. J. Scholl, Brunner Mfg. Co.; Russ Duncan, Duncan Supply Co., Indianapolis; G. L. Brunner, Sr., Brunner Mfg. Co.; J. H. Searles, White-Rodgers Electric Co.; and G. L. Brunner, Jr.

In this group (left to right) are Bob Moody, Wolverine Tube Co.; R. Kennedy Hanson, executive secretary of R.E.M.A.; (next man obscured) then E. A. Vallee, Automatic Products Co.; George Allen, Mueller Brass Co.; A. B. Newton, Minneapolis-Honeywell Co.; R. H. Luscombe, Penn Electric Switch Co., and president, R.E.M.A.; and Mr. Scholl, who seems to have moved over from the table pictured above.

Newcum Discusses Factors That Will Affect Marketing of 'Package' Units

(Concluded from Page 16, Column 5)

mand just as soon as equipment is available.

Since this also is a tried and proved market, the industry should be safe in planning at least a reasonable increase over prewar volume.

Our group should take cognizance of the fact that an ever-increasing percentage of commercial refrigeration will be of the self-contained type, that is, in the package merchandise class.

Points for the 'Package' Unit

Contributing factors to this market trend are:

(1) Hermetically sealed condensing units up to 1 hp. capacity now are available from several manufacturers and will after the war be available from many others;

(2) Factory installed hermetics make possible the use of capillary tubes instead of more expensive expansion valves;

(3) Experience gained by the industry in making self-contained stationary and mobile refrigerators for the Army, Navy and Marine Corps; and

(4) Increasing pressure from distributing organizations for "package merchandise."

In explanation of point 4; the majority of prewar installations of commercial refrigeration were assembled on the job from a variety of equipment, accessories, parts and material.

Why It May Succeed or Fail

The success or failure of the system was dependent to a large extent upon the (1) quality and cleanliness of the several components, and (2) sizing and selection of the various pieces of equipment by the salesman, and (3) how the equipment was handled by the installation men.

The failure of even the smallest accessory for whatever reason not only reduces dealer profit because of the resultant service call, but even more important, makes necessary that the salesman first be a specialist on many different gadgets of which the tailor-made job is composed, and second, a glorified sales and service engineer.

Dealers want their salesmen to sell merchandise — not gadgets; hence there is real pressure on the manufacturers for packaged commercial equipment which can be merchandised like household refrigerators and self-contained air conditioners.

The increased trend toward packaged commercial equipment will transfer the sale of some installation accessories, parts and material from the jobber direct to the equipment manufacturer.

Because of space limitation, inadequate air circulation, and in many cases, consumer preference, much commercial equipment still will be installed to order on the job.

However, we should not lose sight of the trend to package commercial refrigerating equipment, since it might conceivably effect our postwar markets.

It is roughly estimated that less than 10% of the "quick market" for ⅓ to 5-ton self-contained air conditioners has been sold.

Those stores, restaurants and offices that weren't equipped before war restrictions can now pass it off to their complaining customers, but when restrictions are off it seems reasonable to assume that a store, restaurant and possibly offices without comfort cooling air conditioners will be about as popular as would the same establishments without heating systems.

This phase of the industry found its answer to the market—self-contained air conditions — and was in high gear before the war.

With almost no changes in product or distribution methods, air conditioners should quickly hit and hold a very high sales volume.

That thousands upon thousands of new ice cream cabinets will be needed just as soon as the restrictions are off is a well known fact. Many of the ice cream companies have shrunk their stock of cabinets by selling off many of their older models for use as "quick freeze" cabinets, and ironically, could sell thousands more at surprisingly high prices.

Here again the trend is toward hermetics and capillary tubes.

Water coolers for stores, restaurants, schools, offices and factory workers are a dead cinch to be in unprecedented demand. Almost without exception, every place where people shop, eat and work will be equipped with water coolers of one kind of another, because American people, including even the smallest school children, sincerely believe that drinking water which is above 50° F. is as unpalatable as stale bread.

Beverage Cooling Big Item

Refrigerating equipment for the cooling of draught beer, bottled beer, bottled beverages and beverages sold through various types of dispensers, will certainly be required in quantities far exceeding prewar demands.

Draught beer cooling within the keg made real progress before the war. It should have an unprecedented postwar demand.

How many so-called "bottle coolers"—with small hermetics and capillary tubes — will be required to satisfy the immediate postwar demand as well as the subsequent demand is anybody's guess; but indications are that the industry should guess high.

The attempt to cover, in the short time alloted, the prospects of the postwar market for industrial refrigerating and air conditioning equipment would be doing the industry an injustice, since the market possibilities are tremendous and the applications and processes amazingly diverse.

However, here are a few highlights: According to a preliminary report to WPB by Task Committee Munce, Faust and Pendergast, the estimated values, at manufacturers' selling price, of presently installed industrial refrigerating equipment in the food processing industry is $662,128,401. This figure does not include retail food stores, wholesale establishments, public eating places, hospitals, hotels and institutions—just industrial refrigerating equipment for food processing. The figures do include 4,600 locker plants having equipment valued at $14,042,500.

It is pertinent to note from this report that $298,000,000—or almost 50% of the $662,000,000—represents the investment in refrigerating equipment in 6,500 ice cream manufacturing and storage plants.

A few short months ago, 10 to 20 degrees below zero was almost the lowest temperatures the average manufacturer in the industry would tackle. New —67° F. is quite common, and even —110° F. is being reached for many manufacturers of war instruments and equipment.

New Markets from the War

The low temperatures have opened up numerous new applications by which refrigeration is helping to win the war and by which refrigeration will help build a better postwar world in which to live.

Air conditioning in manufacture of steel has saved tons and tons of this precious metal which by the "guess and by God" method would have been rejected. The steel industry will emerge from this war with two contenders for the big money title—the light metals group and the plastic group. Hence steel may have no alternative but to reduce costs by installing air conditioning equipment.

The synthetic rubber plants now are fairly well equipped—thanks to Jeffers and the department stores. What will happen to the synthetic rubber program after the war is a touchy subject at present—but the rubber processors who operated these synthetic plants for Uncle Sam have been exposed to industrial refrigerating equipment in a big way, and will no doubt improve their own natural rubber processing with refrigeration.

Refrigerating equipment aboard naval and marine vessels, cooling coolants for machine tools, rivet cooling, cooling of photographic and X-ray solutions, chemical cooling, cooling of spot welders, and numerous other more specialized applications which have come into being or have been greatly stimulated by the war, offer a preview of the vast postwar markets.

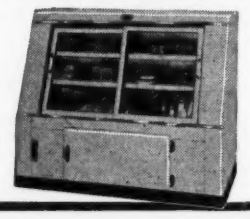
Some way will be found to bring into the homes of America the health and comfort advantages of air conditioning.

There is a big market ready and waiting, but thus far the equipment problem has not been solved, When it is, home comfort cooling will give helicopters a run for the consumer's dollar.

According to figures presented by E. J. (Ed) Tweed, president of Dole Refrigerating Co., Chicago, there are presently installed close to 5,000 locker plants, about two-thirds of which are equipped with plate type evaporators and about 60% of which use "Freon-12."

Regarding the postwar prospects, Mr. Tweed believes that farm and home freezers and low temperature holding cabinets will to some extent supplement the locker plant. It is his further belief, however, that the majority of the processing of meat still will be done by the locker plant, and perhaps the corner grocer, who will have equipped himself to render similar processing and quick-freezing services to owners of low-temperature cabinets.

And this sketchy outline makes no predictions for the vast war starved export markets, since the extent to which, and the manner in which, industry is allowed to serve will be so closely related to government foreign policy, of which we all know so little at this stage of the war.



Methods For Better Service

Cleaning Various Types of Water-Cooled Condensers

By A. J. Mattes, Service Manager, Universal Cooler Corp.

Much of the water available for refrigerant cooling contains such impurities as lime, magnesium, or iron which over a period of time deposit a scale formation on the tubing walls of water cooled condensers. This scale formation, while deposited slowly in the majority of cases, very definitely reduces condenser efficiency or capacity and if permitted to accumulate over a long period of time will eventually result in the complete stoppage of the condenser water coils.

Prior to the war such conditions were seldom brought to the attention of the manufacturer since when the condenser became completely clogged or reduced in effiiciency to the point that a replacement was necessary the affected condenser was usually scrapped and replaced with a new part which could be obtained immediately from the manufacturers stock.

Since the beginning of the war, however, this situation has changed somewhat due to the shortage of copper available for condenser manufacture, particularly counterflow type condensers, since they contain a great deal more copper than either the shell and tube or shell and coil types.

There has accordingly been a steady increase in the number of requests received for approved methods of condenser cleaning and assemblies which would have previously been destined for the scrap pile must now be reconditioned for further use.

While all foreign deposits cannot be successfully removed from the counterflow and shell and coil types of condensers those most frequently encountered can be removed provided the proper action is taken before the assembly has been completely clogged. The following outlines practical methods for cleaning the common types of water cooled condenser assemblies.

Shell & Tube Type Condensers

Scale deposits in shell and tube type condensers are by far most easily removed, since it is possible to gain access to the tubes and make a visual inspection to determine the extent of corrosion or success obtained by the cleaning operation.

To clean this type of condenser, the water valve and both water heads should be removed. A round wire brush of slightly larger OD than the water tubes should be used. This should be fastened to a long handle which will permit a full sweep of the tubes.

The brush should be worked in and out of each tube a number of times or until they appear to be clean, they should then be thoroughly flushed with water and inspected. If all the scale has not been removed the brushing operation should be repeated until all traces of foreign deposits have been removed.

The water heads should also be thoroughly brushed with a wire brush until all rust and scale has been removed and then flushed with water. When re-assemblying the water heads new gaskets should be used in all instances.

Shell & Coil and Double-Tube Counterflow Condenser

Cleaning this type of condenser is much more difficult than the shell and tube type due to the fact that it is impossible to reach the location of corrosion or to determine definitely the extent of scale deposited.

Since the cleaning method outlined above for the shell and tube type condensers obviously cannot be used for either the counterflow or shell and coil types it becomes necessary to use some type of cleaning fluid which will remove scale by chemical action.

An inhibited acid solution made up as follows will be found effective for the removal of the more frequently encountered foreign scale deposits;—Add 22 parts of hydrochloric acid by volume (1.19 specific gravity) to 78 parts of water by volume. To this solution add 1.7 pounds of Grasselli No. 3 inhibitor powder per hundred gallons of solution. This inhibitor powder may be obtained from Grasselli Chemical Division of the E. I. Du Pont de Nemours Co. at Cleveland, Ohio or from any of their branches.

CAUTION: The containers used to prepare or pour the inhibited acid solution should be of wood, crockery, or plain steel. Under no condition should a galvanized iron pail be used for this purpose.

The extent of corrosion can be determined somewhat by the quantity of water the condenser is capable of passing and if there is reason to believe that the foreign deposits are not great they can usually be removed by gravity flow of air inhibited acid solution in the condenser.

Care In Using Solution

Particular care should be taken when using an inhibited acid solution so that it will not be permitted to remain in the coil for more than 12 hours. A chemical reaction between the copper coils and acid will take place after all scale has been removed and if the solution remains in the coil for an excessive period it may dissolve the tube causing an internal leak.

To remove scale deposits by the gravity flow method proceed as follows: Remove the water valve and drain all water from the condenser coil. Disconnect the inlet and outlet water lines. Connect a copper tube to the water inlet connection and form into an upright position so that the top of the tube will extend 4 or 5 feet above the top row of the condenser. This tube is used to admit the acid solution and the use of a funnel is recommended to avoid the loss of the cleansing solution.

Connect another tube to the condenser water outlet connections and into a wooden or crockery pail. Into this outlet line should be teed a tube placed in a vertical position and extending at least 3 feet above the top coil of the condenser. This tube should remain open to serve as a vent to permit the escape of air as the cleaning solution is poured into the condenser.

After the above preparation has been completed the inhibited acid solution should be poured into the condenser until all coils are completely filled or until the solution starts to flow from the outlet line into the wooden bucket. The solution should be permitted to remain in the condenser for a period of eight to 12 hours but under no condition should it remain in the condenser more than 12 hours.

After the acid has been removed with fresh water for approximately the coil should be thoroughly flushed 15 minutes to remove all traces of acid. If the water valve is also badly corroded it should be replaced or thoroughly overhauled.

Forced Circulation Method

Where the scale deposit is believed to be heavy, causing restricted water flow, the forced circulation of an inhibited acid solution is much more effective. To use this method the following equipment is required:

1 Centrifugal type circulating pump, of approximately ½-hp. size.

1 Large wood or crockery container—wooden barrel with one end removed recommended.

2 Globe shut-off valves.

1 Fine mesh strainer.

To use the forced circulation cleaning method remove all water from the container and disconnect both inlet and outlet lines and water valves. Connect a copper tube from the bottom of the barrel to the circulating pump. Connect the circulating pump through a globe valve to the condenser water inlet.

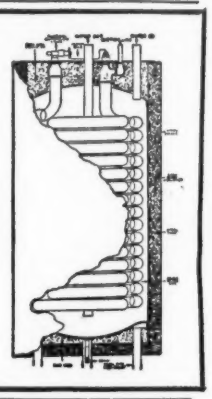
Connect the condenser water outlet through a tee and strainer to the barrel. Connect a vent pipe to the tee in the outlet line and place a globe valve in the vent pipe. The vent pipe should be placed in a vertical position and extended at least 3 feet above the top of the condenser coil.

Pour the inhibited acid solution into the barrel and open the globe valves in the inlet line and vent pipe. Start the circulating pump and circulate the acid solution until the condenser water tubes are completely filled, then close the glove valve in the vent pipe and circulate the solution for approximately eight hours.

The discharged acid solution is strained and returned to the barrel after each cycle to be recirculated. After circulating the acid for eight hours all acid should be removed from the condenser and the water coil thoroughly flushed for approximately 10 minutes with fresh water.

If after completing the above the condenser still shows signs of scale deposit the procedure should be repeated allowing the acid solution to circulate for a period of one or two hours. At most the circulation of acid should not exceed 12 hours.

It cannot be emphasized too strongly the necessity of using every precaution when employing an acid solution as a cleanser for copper condensers, and while the above methods are recognized as the most universally accepted they should be used with discretion. Under no condition should an acid solution which does not contain an inhibitor be used for condenser cleaning.



Credit After the War May Be Real Problem

Taxes, Inflation, Govt. 'Dumping,' Returning Soldiers Are Possible Credit Headaches

By J. W. Baillie, Detroit Lubricator Co., Chairman, Rema Credit Committee*

To speak with authority on the subject at hand requires more prophetic attributes than I care to ascribe to myself, so I merely give you my present thoughts on the matter for what they may be worth. I relegate this subject to the realm of prophecy because I believe the status quo, so far as credits are concerned, is free from any grave danger, and that it is in the postwar future that serious credit problems are to arise.

At the present time markets are fairly stable and payments fairly prompt due to war controls, government contracts and ample money available in the hands of the consumer.

However, the time is not too far away when we will not be blessed, or cursed, depending on how you look at it, with a peak demand, scarcity of product and an abundance of wealth.

No doubt there will be some manufacturers with special purpose equipment who may be caught short on cancellation of government orders, but jobbers on the whole should not be over-stocked so long as present manufacturing controls exist.

But come V-Day and, we hope, less government control, and several problems await us.

First of all, let us think of the conditions that will probably ensue.

Consider for a moment the tax problem. Gone are the days when we could quote with a measure of satisfaction our profits before taxes. The tax outlook being what it is, the time may not be far away when the government and creditors will be running a race to see who gets paid first out of the gross profit dollar.

With tax rates presently burdensome and higher rates in prospect, we are going to find many in the industry confronted with the confusion and expense of reconversion at a time when they are obligated to pay taxes on a comparatively high income for their previous year's business. This alone may place a heavy strain on the financial condition of many. There are others who, during this critical period, may have the additional burden of having their capital tied up on termination of government contracts, but we are hopeful that Congress will survive their present debates on this matter with the correct answer.

Then there is the problem of reemployment and the expense that goes with it. It will be necessary to replace many present employes with those returning from the service. But the credit problem involved for us on demobilization is that concerned with the return of technical personnel, jobbers and servicemen who have been away in the service of our government.

Many of these men will want to get started again in their former vocations. So also, many of these men will be without capital. Thus we have a situation calling for credit, and then there is the serviceman anxious to resume his vocation who is likely to extend credit and rely on his source of supply to carry him through in case of a pinch.

Should the country suffer a period of depression immediately after the war these credit demands may become serious until such time as we attain our predicted postwar prosperity.

On the other side of the picture we have the abundance of savings available to boost the market during any temporary recession, coupled with depletion of stocks. However, it is not inconceivable that much of the present surplus purchasing power may be eaten up by inflation and high taxes during the time when the consuming public are no longer enjoying income from overtime at time and a half, and favorable profit margins.

We have another tendency toward inflation in the fact that at the present time the government is the largest purchaser in the world and is interested in keeping prices down, but after the war this incentive for controlling prices will be supplanted with the incentive to attain a greater dollar volume of business and thus increase the amount of revenue. Thus there will not be the same incentive to control prices that exists today.

Therefore, even assuming a great demand after the war, the problem of furnishing credit to those in the industry returning from government service without capital remains with us, and I'm not so sure that economic conditions will be such that we may throw caution to the winds.

Again looking to the immediate postwar market, there is the prospect that government-owned refrigeration equipment, both new and used, may find its way through certain channels to be dumped upon the market to depress prices at a time when our problems are already burdensome. As to this prospect it might be good business for manufacturers to see that their equipment is bid up to the point where the merchandise must at least take a competitive position in the market.

If this is not done, we have the possibility as in the case of the Detroit Air Force small tool incident. I do not say there need be any scandal in connection with the liquidation of this surplus, but if certain liquidating groups get control of this surplus, there is no doubt that the sales future will be ruined temporarily, at least, on these particular items.

In closing, I repeat that there is presently no serious credit problem in the industry, and there may not be until the present slack is taken up after the war. However, it is the part of wisdom to do all we can to prepare for whatever conditions may confront us on V-Day.

As a step in that preparation we are compiling a complete list of those now in the industry with their payment record. At this point I want to emphasize the fact that if we are to exercise a sound credit judgment, it is imperative that we have a sound basis for such judgment.

To establish this foundation your credit committee is building a master list of credit accounts and to date is making satisfactory progress. However, if we are to complete this foundation so as to support the super-structure which you in the industry will want to build thereon, it will be necessary for all the members to cooperate in furnishing the material that is a necessary part of this task.

Approximately 50% of our members have sent in their customers' cards from which a Master List is being compiled. And with your complete cooperation, we believe that for the postwar period we can build up a listing of credit experiences from those on this list.

In the light of such knowledge we hope to issue semi-annually a report which will enable any credit man to exercise intelligent judgment in the control of his credit practice with the trade.

So in the interest of building a complete and sound foundation for your credit structure, I urge those of our members who have not thus far seen fit to send in his list to do so at the earliest moment. Such cooperation will not only be a great benefit to the refrigeration industry as a whole, but will furnish the material out of which each credit man can build the credit structure he seeks to build, with a measure of confidence otherwise impossible.

And while this record may not be conclusive as a basis on which to found your postwar credit judgment, due to the fact that the problems I have mentioned may affect different members of the industry in varying degrees, yet such a record will be prima faci evidence which we may use to guide our judgment. Until such time as our postwar economy takes on a more realistic cloak I would advise caution in credit judgment from now until the millennium.

*From the talk "Watch Credits" at the Postwar Planning Symposium held during the meeting of Rema at French Lick, Oct. 28.

Future for Service Men Is Bright, But They Must Keep Up With Developments of Industry

Goldberg Lauds Repairmen For Their Work Today, But Warns That They Will Need Education To Cope With New Applications After the War

By Herman Goldberg, the Herman Goldberg Co., Chicago*

The place of the refrigeration service man of today and his services in the refrigeration industry of tomorrow is one which concerns not only the refrigeration service man but also all other people engaged in the various phases of the refrigeration industry, for without the necessary repair and adjustment services which must come after a product is manufactured, the utility of the manufactured product would indeed have a very short life.

We hear a lot about postwar planning and various postwar problems which appear to be anticipated by many people. Government and business too, are thinking along the line of postwar plans, for it is only through planning for the future that we, as a country, will be able not only to assimilate the returning military forces but also effect the reconversion of labor which is now engaged in necessary war activities to other practical peacetime applications.

The various government agencies, manufacturers of supply and equipment, and other forces recognize the important work which the refrigeration service men have been performing through this war period. Through their ingenuity alone, present refrigeration equipment has been maintained and kept in running condition with very little assistance from outside sources. The men who allocate materials for this necessary work recognize the need for these materials, and of course, the service men have been getting as much as it has been possible to allot for these services without hampering the direct war effort.

At times you service men undoubtedly have been bewildered by the lack of materials which you considered necessary to do your very essential repair work, but somehow through your own ingenious means you have found ways to repair jobs and keep them in running order with a minimum amount of new materials.

At times too, you found it difficult to get to certain jobs where there was imminent food spoilage because of restrictions on your automobiles, such as gas and tire rationing, but somehow you have found means to get to distant places where your services were necessary and you did perform the necessary repairs. You are still maintaining these services of currently running equipment.

MOST ESSENTIAL WORKERS

Through these efforts not only the refrigeration industry in general but the country at large owes the refrigeration service men a great deal of thanks, for without your services our nation would not only suffer because of innumerable losses of man-hours in war plants because of food spoilage, but other civilians engaged in necessary civilian life might have had serious repercussions through poisoning which might have affected the entire national morale of our people.

For the present, you, the refrigeration service people are the most essential workers in the refrigeration industry for civilan usage.

There will be different changes of the industry with resultant changes for you after peace is declared, and you have a number of problems to solve in order to obtain a prospective pertaining to long range planning.

I know that you are concerned about the different new applications which will enter your field after the war and the people who will come with these new applications. I know too, that you are concerned about the men who will want to re-enter the ranks of the refrigeration service repair men from military service. These men will not be only those who left the refrigeration business to enter the armed services but also many men who are being trained by the government to perform necessary refrigeration services on government military refrigeration units.

These latter men will have a knowledge of refrigeration from an army need but they may not have a knowledge of refrigeration service in its applications covering the general outline of the experienced refrigeration service man in civilian life.

Following the termination of the war you will again be able to obtain most of the necessary supplies which you will need to service equipment. Although you will be able to obtain supplies, it is questionable whether you will be able to procure equipment such as compressors and motors for at least several months, as it will take some time for the manufacturers to reconvert their plants on the production basis necessary for your peacetime needs.

LARGE AMOUNT OF WORK

It stands to reason then that there will be tremendous amount of repair and re-installation work which has been prohibited up to now and until the war is over. This business alone will more than keep every available refrigeration service man busy as we must bear in mind that there will be other people with various needs of refrigeration service and equipment who will want to re-enter their respective phases of merchandising.

Add to this work the flood of business which is bound to come your way when high-sides as well as other heavier equipment are again made available to you by the manufacturers, and for at least a consdierable time after peace is declared you will be busy on this type of refrigeration work.

The question, however, as to how far the refrigeration service men can perform their duties in the newer developments of the refrigeration industry of tomorrow will be answered largely by the means which you may take to educate yourselves to these new developments and applications and your willingness to take on new obligations in the field.

MUST LEARN MORE

If you are satisfied to continue merely as repairers of present equipment there will be no need for further education nor for new blood to enter your ranks, but if the refrigeration service men are to continue as such during the future it will be necessary for them to take advantage of every means at their disposal to learn more about not only the newer applications but also the newer developments.

It is for this reason that I stress very strongly the necessity of greater education not only to the members of the Refrigeration Service Engineers Society but all refrigeration repair men throughout the industry.

I believe it will be necessary to not only have increased educational facilities for those of you who are now actively engaged, but also for those who will later want to enter the refrigeration service business.

We all know that our country is utilizing the efforts of all industries and all people of these various industries in one unified program to bring an earlier and victorious peace. Through necessity caused by the heat and flame of war, many men who formerly were engaged in other industries have learned to use applications of the refrigeration industry in order to expedite their own positions in the manufacturing of better and more complete war armament.

EXPECTS WIDER USE

Through the use of these refrigeration applications for present needs these men have learned how to apply our industry to their own and when they return to their individual pursuits after the war, they undoubtedly will use many new ideas in their own respective spheres. Many new refrigeration applications will come through these experiences.

We know that there are many uses of refrigeration in other industries such as the oil refining industry, the rubber industry, as well as numerous other industries which haven't used refrigeration services in the past, to any particular degree.

These new tremendous applications at the present time aren't generally known to us. However, undoubtedly many of these applications will remain and be improved upon after the war. It will take the refrigeration service man of tomorrow to maintain this equipment, and he will need all of the knowledge obtainable, from all educational sources.

Food storage applications for apartment buildings, city homes and farms will demand more of your services, and we all know of the steady growth for the need in the farm market for milk coolers, locker plants, freezer systems, as well as other refrigeration needs. In considering new industrial applications you must remember the enlarged food industry applications.

The building industry has been mentioned as having plans for new housing which may employ 6,000,000 men after the war. These men undoubtedly will be used to erect residences which will have air-conditioning systems for rooms as well as the complete houses. There will be apartment buildings which will have air-conditioned apartments. We know that the kitchens will be streamlined and that the refrigeration systems will not only have normal temperatures but will also be built for low and freezing temperatures.

MANY INNOVATIONS

These refrigeration systems will have many innovations in mechanical construction as well as outward design. The refrigeration service and installation man will undoubtedly find a new field in many phases of this new activity. He will also have the opportunity to modernize the current running equipment of that future time, providing of course, that the cost to the customer will be comparable with the prices of new units.

It has been mentioned that the average life of commercial equipment usually runs about six years. Add the two years in which we have already been without new commercial equipment and also the necessary time which will elapse before peace, and it stands to reason that the market for new commercial equipment will be tremendous. You, of course, will also have the opportunity of modernizing old equipment on customer demands.

The service man must bear in mind also, that the controls and valves which he is accustomed to think of as a part of his daily work will be of more varied nature and design because of the various newer and enlarged applications. We have become accustomed to think of accuracies in ten-thousandths and closer of an inch. Through these accuracies will come equipment and supplies establishing greater standards of dependability and broader applications.

In review then, I believe we should consider that whereas many industries other than the refrigeration industry will avail themselves of freezing and cooling methods, we in turn will benefit from the products which these industries will be able to manufacture for our use. Through the usage of refrigeration, these industries will employ many refrigeration people.

Current and future refrigeration equipment will require continued educational means to keep you, as well as newcomers to your field. abreast of the times. To this thought I strongly urge that you enlarge your educational activities.

*Text of the speech "Refrigeration Service Now and After the War" delivered at the Illinois Refrigeration Service Engineers Society's convention Oct. 17 at Rockford, Ill.

'Individualized' Air Conditioning In Capital's New Statler Hotel Wins Favor

No Recirculated Air In System Which Makes Use of High Velocity Air Delivery

WASHINGTON, D. C. — Installation of an air conditioning system supplying completely fresh air at 50% relative humidity the year around, gave Washington's Hotel Statler its biggest season on record last summer, when the thermometer real 90° plus through 52 straight days.

Designed and installed by Holabird & Root, Chicago architectural and engineering firm, the Carrier-unit system is one in which there is no general recirculation of air in the guest rooms and corridors.

Outside air is taken in at the 15th floor level, where the principal primary treating and handling apparatus is located. Here the air is filtered and humidified or dehumidified, according to the season.

Two Air-Treating Systems

The two main primary air-treating systems route the air into four separate zones of the building, allowing adjustment of the temperatures in the main distribution system according to building exposure.

The main primary air fans also are on the 15th floor, and from there the air is conveyed through circular ducts to the guest rooms through vertical risers along the outer wall, each riser serving a tier of rooms or, in some cases, two adjoining tiers of rooms.

With the relatively high pressure, and the resulting high velocity at which the air is distributed in the conduit system, the circular ducts can be limited to a size not greatly larger than the covered steam pipes ordinarily used for heating.

Multi-story buildings, when conditioned by the conventional methods, usually require unwieldy duct sizes which seriously interfere with the treatment of the rooms and encroach upon otherwise usable floor space, all demanding increased building cubage and consequent cost.

In each guest room a small-sized air pipe tap is taken off the vertical primary air riser, and extended into a room-distribution unit located directly under the window. The room unit itself contains a system of air-supply nozzles and a small secondary coil.

Conditioned Air 'On Tap'

The primary air conveyed through the small pipe tap is delivered through the nozzles, again at a very high velocity, and emerges into the room through a grille in the top of the unit.

A second grille is placed in the front panel of the unit, directly before the secondary coil, and the injector effect of the primary air, issuing at high speed from the nozzles, induces a secondary flow of air through the front grille and the coil.

This mixes with the primary air before being delivered into the room.

There are no motors or moving mechanical parts in the guest room units, and no source of noise or vibration at this point. The units are baffled and sound proofed, and under ordinary conditions it is impossible to detect any sound whatever in connection with the air delivery.

The small secondary coil in the units described circulates hot water in winter and chilled water in summer, and a control permits adjustment of the temperature of the primary air received from the main units, according to the individual guest's preference.

'Thinking Valve' Regulates

This is accomplished by means of a "thinking valve" that can be set by the occupant, in response to which the coils inside react automatically against variations in the outside temperature.

The room unit also contains a manually operated damper in the air supply pipe, by means of which the entire unit can be turned off if the occupant of the room so desires.

Thus all the air conveyed to the room through the duct system is outside air, and the only recirculation possible is within the room itself. Each guest is protected against sneezes or coughs occurring in another room.

Primary, Secondary Coils

There is no general recirculation and none of the interchange of air between rooms customarily found in the more conventional type air conditioning systems.

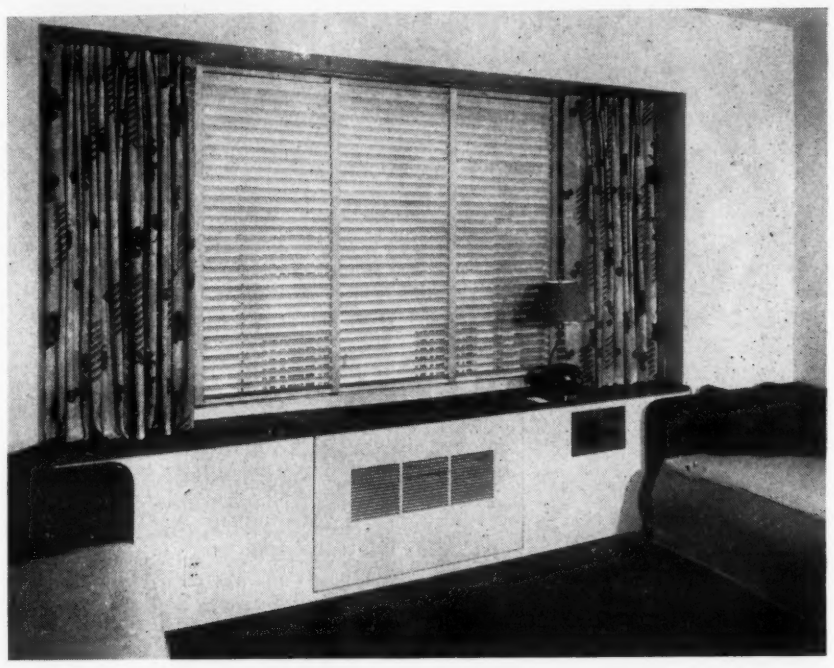
An important advantage of this primary and secondary method of air treatment lies in its ability to produce the many different shades of temperature required to suit the individual taste.

In intermediate seasons, when outside temperatures are on the borderline of comfort, it is possible to operate the system so as to provide heating in one room and cooling in an adjoining room to the moderate degree required by the intermediate outside temperatures.

This is accomplished by circulating warm air in the primary distribution system and chilled water in the secondary coil system, or vice versa.

Results of the system's efficiency so far have been lower cleaning bills for rugs, draperies, and other furnishings. And because of the exact control made possible, lower heating costs for the winter months have been estimated at substantial fuel savings.

Combining Engineering and Architectural Detail



Each room in the Washington Statler contains the architecturally designed air-conditioning unit shown just below the window. The conditioned air is shot into the unit at great velocity where its force is broken by a system of baffles which protect the occupant from drafts when the conditioned air comes out of the vertical grille shown above. Just to the left of the telephone are two knobs by which the room guest may regulate the temperature of the room to suit his individual comfort. The panel below the telephone is for the built-in radio.

Sailors Go 'Back to School' So They Can Operate Refrigerators on U.S. Naval Craft

Carrier & Navy Cooperate to Give Instruction In Theory & Practical Repair Problems

SYRACUSE, N. Y. — Navy men who will take charge of refrigeration equipment on American fighting ships are going "back to school" at the plant of Carrier Corp. here, where refrigeration school for naval personnel is now in full swing.

Describing the school and its purposes, William G. Hillen, manager of the International Division of the corporation, points out that the course being given for Navy men incorporates part of the course of study given engineers who joined the Carrier organization in peace time and also includes much of the training given to personnel of the company participating in repair and maintenance work.

SEEK SPECIFIC RESULTS

"The course given at Carrier for the Navy men is designed to produce specific results," Mr. Hillen points out. "They are using in classroom work duplicates of refrigerating systems that they will later operate on battleships, cruisers, destroyers and other fighting ships.

"However, the training is not limited to operation, maintenance and repair of refrigerating equipment but includes as well basic technical instruction on the theory of refrigeration and low temperature air conditioning."

The faculty consists of five men from the United States Navy and three men from Carrier. The Navy representatives are: An Ensign, in charge of school, as representative of the Navy; a Machinist Mate, First Class, assistant to the Ensign; and three Machinist Mates who serve as assistants.

The Carrier representatives are: Mr. Hillen, who acts as Dean of the School, and who has had charge of the Training School providing engineers entering the employ of the Carrier Corp. during peace times, H. R. Jaeggli, Director of the service department, who serves as an advisor to the faculty, C. O. Barrett, representing Carrier as Director of the School.

The students of the school are those who have completed their boot training and enter the special course for refrigeration as Machinists Mates or Fireman.

The curriculum is divided into four classes that somewhat parallel the college freshman, sophomore, junior and senior set up.

The freshman class instructions pertain to theory of refrigeration and low temperature air conditioning. Subjects under discussion include the flow of heat, kinds of heat (sensible and latent), measure of heat and an explanation of heat as a form of energy. The theory of refrigeration with the cycle of operation illustrated by an animated design, means of estimating the heat load that must be carried by the refrigerating unit, and the function of each part of a refrigerating unit, are given in detail.

ORAL QUIZZES CONDUCTED

When the first or "Freshman" course is completed, each Navy man in the class has a basic knowledge of refrigeration. Oral quizzes with open discussion bring out points that need to be emphasized.

The second part, or sophomore course, is concentrated on what an engineering college specifies as "shop classes." It is a tear-down and rebuild program in which each member of the class participates. The class is divided into groups of three men each. The groups are rotated so that each spends one day tearing down and rebuilding an assembly.

As each piece is removed from a refrigerating compressor, ice maker, or control equipment, its function is described by an instructor. Special features are pointed out. The parts are then reassembled and put in operating condition by the students. The procedure permits each person to become thoroughly familiar with all the equipment, its function, and how it fits into the whole system. When each group has torn down and rebuilt the various assemblies, reviews and oral examinations are given to make sure that all present are ready for the next course.

Maintenance and repair are the major subjects for the junior period. The first day is spent on detail study of intricate controls. Each student actually makes adjustments and practices servicing these delicate instruments on which continuous operation of equipment depends so much. On the second day refrigerating piping is given detailed attention, with discussions held on materials, fittings, valves and joints that are standard parts of the system.

FURTHER SHOP WORK

Again the class is divided into groups for shop practice in making up flared and soldered connections and various types of joints. With the same attention to details as well as to the overall picture, the Navy type condenser, the compressor motor, seal assemblies and various parts are described, worked with, serviced and repaired.

Each student participates in all demonstrations. He removes and adds oil, checks discharge valve, seal assembly, pressure relief valve, and drive belts. He removes and charges refrigerant, cleans tubes, purges air from lines, changes cartridge in expansion valves, tests for leaks, sets controls and performs all the operations that a maintenance and repair engineer does.

The senior class concentrates on operation and trouble shooting. Operating practices, defrosting and practical methods in trouble shooting are set forth. Each student draws a piping diagram of the complete refrigerating system to use when looking for trouble. The various parts of the system and the functions of each are reviewed with emphasis on possible causes of trouble.

After class discussion and demonstrations, a trouble shooting schedule is set up. Various parts of the machine are "tampered with" and the student must locate the trouble and cure it. Plugged inlet water strainers and liquid line valves, shortage or overcharge of refrigerant, faulty valves, blown fuses, dirty contact points, expansion valve inoperative and other troubles are put into the system by the instructor. Locating and eliminating the trouble by the student serve as a final examination to which the last four days of the course are devoted.

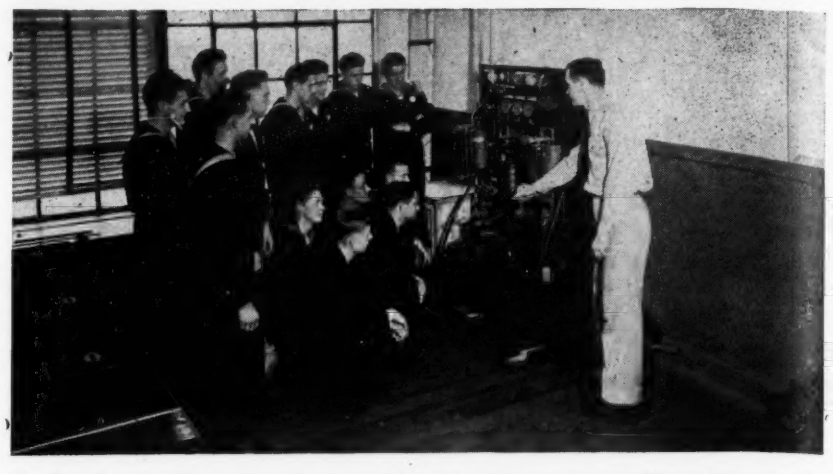
Upon completing the Navy Training School, each student is given a certificate. It is believed that the certificates will serve as credentials when the men return to civilian life and are applying for a position in the refrigerating field.

In spite of the surroundings of the school being that of an industrial plant, the customs of the Navy have been followed within the school as far as is practical. Navy discipline, relation between commissioned and non-commissioned men, and respect for authority are maintained at all times.

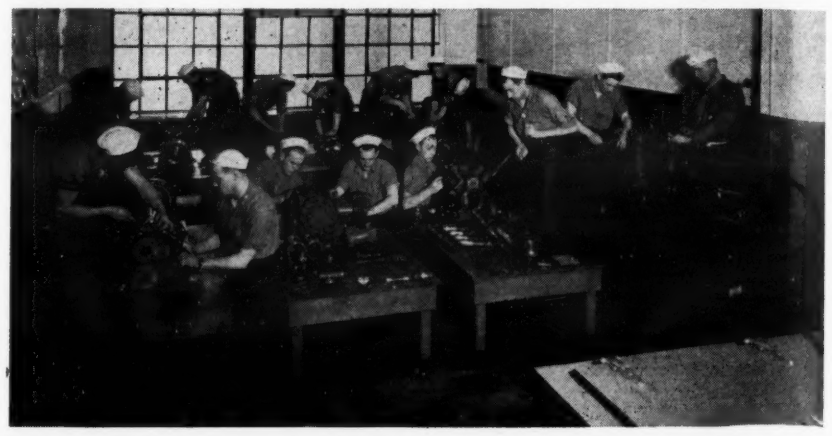
In setting up the school, Carrier undertook to find housing for the students, to provide recreation facilities and otherwise to make pleasant their sojourn in Syracuse.

Total period consumed by the course is one month.

They Learn by Experience



Students attending Carrier Corp.'s Navy School on refrigeration watch closely as this special machine demonstrates the refrigeration cycle. After sailors complete their boot training some of those selected to operate refrigeration equipment are put through a month's training by Carrier and the Navy, studying the fundamentals of refrigeration and doing shop work.



Tearing down and reassembling various types of equipment gives sailors at the Carrier school experience in handling of the parts in preparation for actual repair and maintenance on board ship.

These Are Matters of Immediate Interest To the Field From the French Lick Meeting

(Concluded from Page 1, Column 5)

no need to use a form for each item. But he should ask for ratings only on such items as can be rated under Form 547.

* * *

Further expansion in the number of refrigerated locker storage plants can be expected in 1944. All questions and correspondence about the locker plant program should be directed to the War Food Administration at Washington, rather than to the Refrigeration Section of WPB.

* * *

A program for individual "farm food freezers" has been under consideration, but there seems to be little possibility of any immediate action permitting production of this item.

* * *

Surveys have revealed that there is a real need for a "replacement" program for essential food processing and preservation equipment. A program is under development which may permit production of equipment for such purposes.

* * *

It is recognized that there is a justified demand for a limited production of "reach-in" and "walk-in" type commercial refrigerators for civilian use and it is quite possible that some provision may be made for a certain production of these items in the not-too-distant future.

* * *

A proposed revision of Limitation Order L-38 may permit the unrestricted sale of certain additional items, and may also permit the production of some few items deemed essential on a basis of a percentage of 1940 production.

* * *

The industry is already being permitted to use more aluminum, copper, and non-ferrous metals (for valves and fittings) and will probably get more of such materials barring unforeseen changes in the war production program.

Maxwell and Moody Direct Wolverine Tube Sales

W. H. MAXWELL

DETROIT—W. H. Maxwell has been appointed general sales manager and R. F. Moody, assistant general sales manager of the Wolverine Tube division of Calumet and Hecla Consolidated Copper Co., announces Otto Z. Klopsch, vice president of the company.

Mr. Maxwell will divide his time between Detroit and New York City, establishing permanent headquarters in Detroit after Jan. 1, 1944. Since 1932 Mr. Maxwell has been in charge of Wolverine's eastern sales office in New York City. He joined the company in 1930.

R. F. MOODY

Baltimore-Washington A.S.R.E. Hears Two Speakers

BALTIMORE, Md. — Two talks featured the Oct. 28 meeting of the Baltimore - Washington section of American Society of Refrigerating Engineers held at the Engineers Club here.

"Automatic Controls for Air Conditioning and Refrigerating Equipment" were discussed by R. K. Hunter, manager of Johnson Service Co. here. J. A. Doyle of the Electric Institute of Washington, D. C. told what the institute is doing to solve the refrigeration manpower problem.

Water Cooler Rental Co. Advisory Group Formed

WASHINGTON, D. C.—A Water Cooler Rental Companies Industry Advisory Committee has been appointed by the War Production Board, and is headed by Frederick W. Smith as the government presiding officer.

Members include J. E. Canaday, Canaday Cooler Co., Inc., New York City; William Greene, Great Bear Spring Co., New York City; E. W. David, Chas. E. Hires Co., Philadelphia; C. W. Johnson, Hinckley & Schmitt, Chicago; A. Galston, Puro Filter Corp. of America, New York City.

W. F. Kelly, Thompson Water Cooler Co., Boston; A. S. Goudey, Boston Water Purifier Co., New York City; and E. G. Pierce, Boston Filter Co., Inc., Charlestown, Mass.

Buffalo Forge Net For Quarter $319,170

BUFFALO—Buffalo Forge Co. and subsidiaries reported net profit of $319,170 for the quarter ended Aug. 31, compared with $278,693 in the comparable 1942 quarter. Earnings for the latest quarter were equal to 98 cents a share compared with 86 cents a share in the 1942 quarter.

The profit for the latest quarter was after charges, federal taxes and a provision of $250,000 for wartime contingencies, but is subject to renegotiation.

Farm Freezer Firms Form Association

(Concluded from Page 1, Column 2)

into an efficient and well organized program," explains Secretary F. J. Bommer, Jr. of Sanitary Refrigerator Co., Fond du Lac, Wis.

"It will be the aim of the new association to work closely with the various departments of the government now handling the emergency food program," he added. "Meetings with these departments are already being arranged."

In addition to President Steinhorst and Secretary Bommer, the new association elected as officers H. L. Schaefer of Schaefer, Inc., Minneapolis, vice president; and J. A. Archbald, Jr. of Jewett Refrigerator Co., Buffalo, N. Y., treasurer.

Four men were named to the board of directors. They are: S. C. Bell, Quillen Bros. Refrigerator Co., Indianapolis; R. R. Jamison, Esco Cabinet Co., West Chester, Pa.; J. K. Noel, Jr., Victor Products Co., Hagerstown, Md.; and J. E. Wilson, Jr., Wilson Cabinet Co., Smyrna, Del.

Million Refrigerators In '44 Is OCR Plan

(Concluded from Page 1, Column 2)

If the production schedule is approved, the appliances will hit the market around the middle of next year, "guesses" one OCR official.

Factors which must be considered by WPB in contemplating resumption of manufacture are the amount of manpower, materials, and facilities which can be diverted from armament production for refrigerator and washer production. It was indicated that the one-million figure for washers may have to cut.

Necessity of keeping present refrigerators and washers operating is also stressed by the OCR. The difficulty here, however, is not so much in the supply of repair parts, according to OCR, but in the acute shortage of service men.

There are enough spare parts available to keep popular makes of refrigerators and washers in operation, contends OCR, but as the industry knows only too well, the chief problem today is the lack of service men.

Home Food Preservation Guide Is Available

MANSFIELD, Ohio—Instruction in quick-freezing, dehydrating, and various methods of home canning is given by Westinghouse Electric & Mfg. Co. through a 48-page booklet edited by Mrs. Julia Kiene, director of the Westinghouse Home Economics Institute, the company announces.

Although it is basically a home canning guide, the book reports on quick freezing, saying, "all commonly grown fruits and vegetables can be stored safely by the quick freeze method," and points out the necessity for speed during the procedure. It describes how to prepare fruits and poultry and what kind of container to use.

The greater part of the "Home Canning Guide" is devoted to the four main methods of canning—pressure cooker, water bath, oven or roaster and open kettle. Directions are also given for processes used in dehydrating, brining, and winter storage.

"Since it is the patriotic duty of every homemaker to conserve and preserve food," Mrs. Kiene says, "the Guide has been edited so that it will be equally helpful to victory gardeners, and city-dwellers."

Indexed and illustrated, the "Home Canning Guide" can be obtained from Westinghouse retailers or by sending 10 cents to the Westinghouse Electric & Mfg. Co.

How Locker Plants Figure In The War Food Program

Administrator of U. S. Locker Plant Program Explains Economic Factors, Suggests Better Use of Plants

By S. T. Warrington, Senior Agricultural Economist, U. S. Department of Agriculture, Washington, D. C.*

According to the annual survey conducted by the Farm Credit Administration, as of the beginning of 1943, there were approximately 5,000 local food processing and frozen food locker plants operating in the United States. Those reporting had an average capacity of 346 lockers.

They were serving at that time an average of 288 families per plant. Thus we had a total capacity for 1,730,000 lockers which were serving 1,440,000 families or approximately seven million people. According to earlier research, these plants will handle an estimated 865 million pounds of food during 1943.

Just where in the vital industry of food production, processing, storage and distribution does this child of the last decade, the locker industry, fit? Many of those who are unfamiliar with the industry as it actually operates in the country, find it difficult to grasp the full significance of the industries' place in the food picture.

Not a Vehicle For Hoarding

Some see in it only an opportunity for a selected few to hoard food supplies. Others are concerned about the waste of inedible offal which may result from a lack of the facilities or means of processing such. Still others feel that many small processing storage units are inefficient in the use of manpower and materials.

There are, no doubt, some situations where these criticisms are justified. As in any industry there are examples of waste and inefficiency. Too, there are those few individuals who would violate the fundamental principle back of rationing, namely, equitable distribution of the nation's food supplies.

On the other hand there are some fundamental and indisputable facts upon which the industry is founded that when carefully analyzed would seem to prove that the right type of locker operation and utilization does make a contribution to the total food supply program.

In an attempt to get at the foundation of this reasoning, I should like to take you back to the first few years of the development in Minnesota during the middle thirties, where as a member of the staff I, together with others, was asked to work with operators and patrons to determine the basic weaknesses and strong point of this new industry.

The 'Strong Points'

Two points stood out in the studies of patron utilization which have a bearing on the questions we are concerned with at this time: First, that when rates for processing and storing locally grown foods were in line with costs families effected real savings over purchase from conventional channels and, second, that families who had been processing and storing their own foods found that the well operated processing and storage unit could eliminate much waste and spoilage which normally occurred when they processed their own foods on the farm and in the home.

Let us analyze this question of money savings. Tobin of the University of Chicago and Greer of the American Institute of Meat Packers in their bulletin entitled "What Becomes of the Consumers Meat Dollar" found that it costs 12½ cents per pound to move beef from the farm to the consumer.

This same pound of beef can be slaughtered, processed, ready for the table and stored frozen for 2½, to 4½ cents per pound. The difference of eight to nine cents per pound represents cash savings. Normally money costs represent manpower and materials.

A Processing Center

Thus it would seem that efficient local processing and storage represents a significant saving in manpower materials. The greater the distance the animals and the meat must be moved to processing and storage centers, the greater the amount of manpower and materials that may be released by local processing for direct war use.

This reasoning will, of course, hold true only if manpower and materials are used efficiently in the local processing and storage unit. The latter is one of the industry's major problems.

There are some in the industry who apparently feel that because the system provides a different product and a more convenient means of procuring foods that the need for emphasis on efficiency is not too important.

What Is Meant by 'Efficiency'

By efficiency in this case. First, I mean, a reasonable investment per 100 pounds of food processing and storage capacity; Second, a well arranged unit or one in which labor and management can be used to good advantage; Third, a unit which has the facilities to render all of the services required to process foods in a manner which will satisfy the needs of patrons.

In analyzing the efficiency of your operation you should not look down the street for comparison. Rather, you must look into the family kitchen, the large commercial processor in the terminals, the system of food distribution, and last but not least the future. All of these offer competition for manpower and materials.

Dangers to Locker Plants

Watch carefully for: First, improvements in frozen food cabinets which will put the housewife in a competitive position; Second, greater economies in the commercial production and distribution of frozen fruits and vegetables; Third, marked shifts in the system of meat processing and distribution. For example cutting, grading, packaging, freezing and distribution through retail cabinets.

Whether you retain your place in the local food processing and storage picture will depend in the final analysis how good a job you do in satisfying your communities needs in an efficient manner.

To "rest on your oars" today is dangerous. Further it is bad taste, one might even say, unpatriotic in war not to eliminate waste. Your job for the duration is, therefore, to wash out the frills and unnecessary services. Use your manpower and materials in the best possible combination.

The second important contribution of local food processing and locker plants during peace which becomes even more significant and hence necessary during war is the elimination of food waste which occurs on farms and in the homes.

This waste may tage several different forms. It may be spoilage in foods resulting from a lack of experience in home processing. Literally thousands of new families are becoming home processors this year in order to protect their own food supplies.

It is estimated that slaughter of hogs by or for farmers may be 35 percent greater than the 10 to 14 million head slaughtered in normal times. Meat and poultry as well as vegetable and fruit processing by the individual families has increased tremendously.

Help Novices At Preserving

Many without experience are attempting to preserve their own foods. To the extent that you can aid these people and thus eliminate spoilage by proper chilling and preservation you will make a contribution.

Waste in foods may result on the farm as a result of families actually consuming more meat than necessary at butchering because it can be eaten fresh only during a short period after slaughter. When that is gone they turn to commercial supplies. Hence, lockers may make a contribution by spreading the consumption of home killed animals over longer periods in fact over the entire year.

Waste of vegetables may and actually does take place when the family produces more beans, corn and peas than they can eat fresh or wish to can. These small surpluses are not readily or easily sold in the small town.

You as operators can aid in this connection by serving as an efficient and effective exchange agent as between the producer with the small surplus and the family who does not have the surplus. Let your customers list products on your for sale and wanted black board in the plant.

Encourage Storage of Surplus

Encourage patrons to bring in their small surpluses. If only half of the locker patrons in the United States merchandized and thus saved an average of 50 pounds of vegetables, the total would amount to over 36 million pounds.

Everyone would agree that this would be a significant contribution to the war food program. Consumer groups can under rationing come into your plant and prepare such foods for locker storage which they have

(Concluded on Page 25, Column 1)

*Address given at the Fifth Annual Convention of the National Frozen Food Locker Association.

What Locker Plants Do To Aid War Food Program

(Concluded from Page 24, Column 5)

not produced without giving up points.

There are many other ways in which locker plants can contribute to the war food program. First on my list would be the encouragement such facilities may offer to those who might wish to produce their own foods.

Locker plants do this, I contend, by providing a simple and yet safe means of preserving foods particularly non-acid vegetables in a palatable and nutritious form. Second, foods properly processed and frozen do retain their nutritional values to a higher degree than some other means of processing and preservation.

To summarize: the properly located and efficient and well rounded local food processing and storage unit can:

1. Save the manpower and materials involved in moving products to and from processing and storage centers.

2. Eliminate food waste on farms and in the home resulting from spoilage and the lack of satisfactory market for small surpluses.

3. Encourage production of foods by and for families by providing a safe and economical means of preserving foods in a very palatable form.

Official Questions - and - Answers On Plumbing, Heating Repair Order

WASHINGTON, D. C.—Official interpretations in question and answer form of Preference Rating Order No. P-84, as amended (Plumbing and Heating Emergency Repairs) have been issued by the War Production Board. Excerpts follow:

Q. The order provides that a preference rating of AA-5 may be applied to deliveries to a seller of repair items and conversion parts. Does this mean that the seller is given an automatic rating of AA-5 to obtain repair parts for stock to be used as the need for them arises?

A. No. Before a seller may apply the AA-5 preference rating, he must have first obtained from a consumer a certification as provided in paragraph (d) (1).

Q. Who must sign the certification provided in paragraph (d) (1)?

A. The consumer, in other words, the end-user or the person who requires the repair of replacement, either the landlord or the tenant, whoevers buys the material.

Q. In obtaining a certification from the consumer, must the seller submit it to the consumer an itemized list showing all the items used in the repair or replacement?

A. No. This is not necessary, but the consumer should not certify unless he knows what items were installed. However, to apply the preference rating, the seller must prepare an itemized list of the materials. A copy of this list should then be attached to the certificate received from the consumer and retained in the seller's files.

Q. Must a person who buys equipment for several buildings sign a separate certificate for each building?

A. No. One certificate may be made to apply to several buildings, by designating them on the dotted line after "Address of installation."

Q. What does the seller do with the certificate received from the consumer?

A. The seller retains the certificate and keeps it on file as evidence of his authority to apply an AA-5 rating to obtain material or to replenish his inventory.

Q. May the rating assigned by this order be used to repair electric water heaters?

A. Although the entire unit is not included in the definition of plumbing equipment, the rating may be used to replace those parts which are interchangeable components of either electric or non-electric heaters.

Q. How is the rating applied by the seller?

A. After receiving the certificate from the consumer, the seller applies the rating in the same way as he would apply the rating assigned under any other order. The procedure and standard form of certification are described in Priorities Regulation No. 3.

Q. The order states that the ratings may not be used to replace usable equipment or to make a substitution which would provide more extensive facilities than are necessary to replace the equipment, part, or parts worn out, damaged, or destroyed. What does this mean?

A. This does not mean that the equipment being installed must be exactly equal to the replaced equipment, but simply that no additional services are to be provided by the new installation. Several examples will help make this clear:

Q. May a worn out 20 gallon water heater be replaced by a 30 gallon water heater?

A. No. Such a replacement would constitute more extensive facilities and, therefore, would not be permissible under paragraph (b) (1). It is not necessary to replace a water heater with one of exactly the same type as the one used previously, provided the capacities of the two heaters are the same.

Q. How is the re-rating provided for in paragraph (f) effected?

A. The re-rating procedure is set forth in Supplementary Order P-84-a. This order states that: "Any person, with whom an order for plumbing and heating equipment was placed prior to Aug. 21, 1943 and rated A-10 in accordance with order P-84 as amended Dec. 16, 1942, which order may now be re-rated AA-5, is authorized to treat such order as re-rated without requiring any notice or certificate to be furnished to him by his customer, provided that if any orders are re-rated pursuant to this supplementary order all orders on the books of the manufacturer or distributor which may be re-rated under P-84 must be so re-rated."

Q. Should List A be depended on as a complete list of the items rationed by the Office of Price Administration?

A. No, it is believed complete but is not authoritative, but added to the order simply for the convenience of the industry. For authoritative information, consult the OPA Ration Regulation 9A, or your local War Ration Board.

Missouri Men Honor Russell

ST. LOUIS, Mo.—R. J. Russell, vice president and sales manager of the Century Electric Co. here, has been elected president of the Associated Industries of Missouri, an organization devoted to the promotion of fair business and employe relations policies among employers and employes in Missouri industries.

American Business Must Learn Technique Of 'Cultivating' Export Field, Says Gifford

DETROIT—American business enterprise must train more men in the lore and technique of foreign trade if America is to obtain its fair share of a world-wide boom in foreign exports immediately after the war, according to Roy W. Gifford, vice-president and assistant general manager of Norge Division of Borg-Warner Corp.

"These men must be men of good character and know their customers—they must know how to tune in with the temperaments, customs, traditions, business methods and national ideals of the people they call upon," Mr. Gifford said.

"Too often, American companies send sales representatives into South American countries, for example, who know Spanish or the particular language very imperfectly—who segregate among themselves or other Americans and attempt high pressure where it should not be used. They rush in to get an order—nervous and anxious to be on their way."

"On the other hand, the British or German export agent takes it easy—visits with his prospect before talking business—knows his language perfectly. He gives the impression of settling down in the country as a permanent resident. He shows evident respect for the nationality and the hopes and ideals of its people. The Britisher, particularly, knows the political situation and how to handle the very delicate subject of credits. Foreign trade is an integral part of British education."

Mr. Gifford pointed out that his company has had very little difficulty with credits in foreign countries. He said that a group in Norway owed the company nearly $30,000 for a shipment of refrigerators and other household appliances. After the German invasion the company marked the account off as a loss. Later, however, the Norwegian group paid the account in full despite the German occupation.

Indications that England will be a big market for household appliances after the war were revealed in a letter received by Mr. Gifford from the company's British distributor. The letter said that "so many houses have been destroyed that we shall be confronted with a big program of rebuilding and the government has set up a Works and Planning Ministry who are busy on the topic of standardization, particularly of kitchen design and equipment."

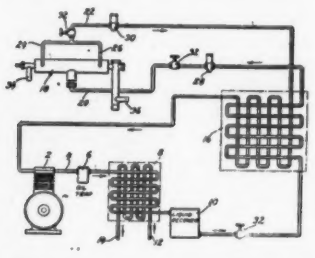
"The big requirements are—cheapness and reliability together with ability to fit neatly into small kitchens when in use and not in use. Everyone wants a refrigerator—it is just a matter of price and place to put it."

Mr. Gifford said that the British, like some other countries, may make their own cabinets for refrigerators but that Americans will supply the mechanism and engineering supervision.

PATENTS

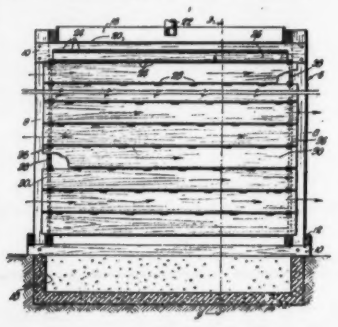
Weeks of Oct. 5 & 12

2,330,876. TEMPERATURE CONTROL APPARATUS. Emanuel Feinberg, Detroit, Mich. Application Jan. 30, 1942, Serial No. 428,919. 5 Claims. (Cl. 257—4).



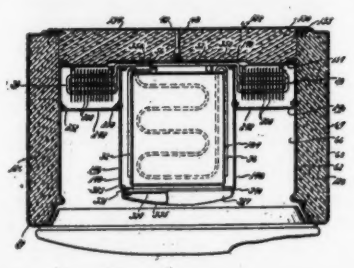
3. In a heat exchanger, a passage for a fluid to be heated or cooled, a passage for a coolant, said passages being adjacent to provide thermal contact between the fluid and the coolant, a heater in the fluid exit end of the fluid passage, a valve in the line through which coolant is withdrawn from the heat exchanger, a temperature sensitive element in the fluid entrance end of the fluid passage, and means operable by the temperature sensitive element to close the valve and supply heat-producing energy to the heater, or to open the valve and interrupt the supply of energy to the heater.

2,330,901. SPLASH DECK ASSEMBLY FOR COOLING TOWERS. Leon T. Mart, Mission Township, Johnson County, Kan., assignor to the Marley Co., Inc., Kansas City, Kan., a corporation of Kansas. Application Nov. 21, 1941, Serial No. 419,922. 13 Claims. (Cl. 261—111).



1. A splash deck assembly for cooling towers comprising a plurality of spill slats; a plurality of spill slat supports having notches formed therein for receiving the spill slats to prevent displacement of the slats in one direction; a series of tie bars positioned at an angle to said supports and having notches therein for receiving said supports to interlock therewith to hold the latter against lateral displacement and a plurality of spaced apart standards positioned to engage the tie-bars to preclude longitudinal movement thereof.

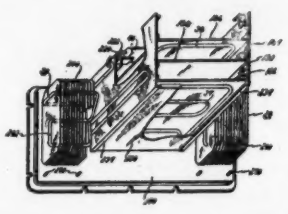
2,330,913. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Aug. 8, 1940, Serial No. 351,834. 6 Claims. (Cl. 62—89).



1. Refrigerating apparatus comprising a cabinet having an inner liner, a casing positioned within said liner, a refrigerant evaporating element positioned within said casing but spaced therefrom to maintain non-frosting temperatures on the exterior surfaces of said casing, a door for giving access to the interior of said casing, sealing means cooperating with said door and said casing to prevent the flow of air into the space enclosed by said casing and means cooperating with said door to provide a dead air space to limit the flow of heat through the door into said space.

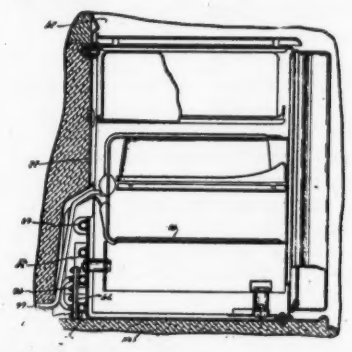
2,330,914. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application Aug. 8, 1940, Serial No. 351,834. Divided and this application Feb. 24, 1941, Serial No. 380,239. 2 Claims. (Cl. 62—89).

1. Refrigerating apparatus comprising a cabinet having a compartment to be cooled, a casing positioned in said compartment, a refrigerated shelf positioned in and adjacent the upper portion of said casing for freezing substances, a lower refrigerated shelf for freezing substances positioned in said casing below the first refrigerated shelf and above the bottom wall of the casing to provide a storage space therebelow, a removable shelf positioned between said refrigerated shelves,



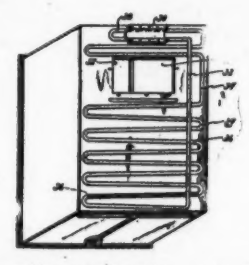
a receptacle positioned in said storage space, means for operating said refrigerated shelves for freezing substances placed thereon and for cooling said receptacle slightly above the freezing point of water, the space between said refrigerated shelves being such that when said removable shelf is removed said receptacle may be placed on the lower refrigerated shelf when it is desired to cool the receptacle below the freezing point of water.

2,330,915. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application Aug. 23, 1940, Serial No. 353,924. Divided and this application July 18, 1941, Serial No. 403,027. 2 Claims. (Cl. 62—125).



1. Refrigerating apparatus comprising a primary system including two refrigerant evaporators connected in series relationship, means connected in the system between said two evaporators for maintaining the first one of said evaporators to receive refrigerant at a higher temperature than the other, and a secondary refrigerating system including an evaporator and a condenser associated with said higher temperature evaporator.

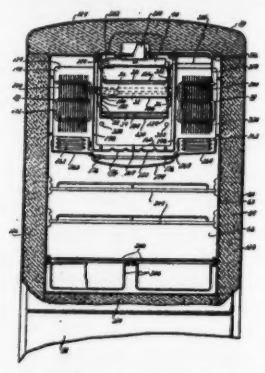
2,330,916. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application Aug. 23, 1940, Serial No. 1941, Serial No. 403,353. 1 Claim. (Cl. 62—116).



Refrigerating apparatus comprising, a secondary refrigerant evaporator of circuitous formation arranged with one end thereof terminating above the other end thereof, a secondary condenser positioned above said evaporator, a conduit connecting the upper end of said circuitous evaporator in open communication with said condenser, a second conduit connecting the lower end of said circuitous evaporator in open communication with said condenser whereby said conduits establish open communication between the condenser and evaporator to cause operation in both at the same pressure, and means positioned in said circuitous evaporator between the upper and lower ends thereof to promote ebullition and direct the flow of refrigerant therein upwards toward the upper end of the circuitous evaporator and the condenser.

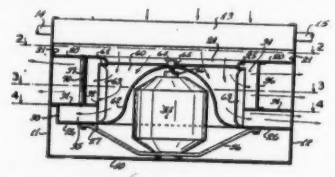
2,330,917. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application Aug. 8, 1940, Serial No. 351,834. Divided and this application Aug. 8, 1941, Serial No. 405,900. 2 Claims. (Cl. 62—4).

1. Refrigerating apparatus comprising a cabinet having two compartments to be cooled, heat absorbing means for cooling said compartments, a refrigerant condensing element for operating said heat absorbing means at sufficiently low temperatures to cool the circulating air in one of said compartments below the freezing point of water and the air in the



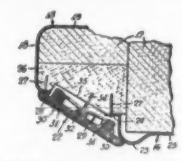
ture, a control element for controlling the operation of said condensing element, a thermo-sensitive power member for said control element positioned to be influenced by said circulating air cooled below the freezing point of water, a thermal bulb connected to said power member and extending into one of said compartments and a second thermal bulb connected to said power member and extending into the other of said compartments.

2,330,938. MULTIPLE OUTLET BLOWER ASSEMBLY. Edmond Bryan Williams, Litchfield, Conn., assignor to the Torrington Mfg. Co., Torrington, Conn., a corporation of Connecticut. Application Nov. 14, 1941, Serial No. 419,113. 2 Claims. (Cl. 230—47).



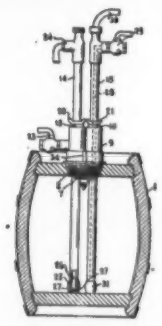
1. In a multiple-discharge air blower assembly, a casing structure, a centrifugal blower wheel rotatable in the casing structure and constituting the sole air displacement agency in the assembly, the wheel being of a relatively deep or axially elongate type, including a back plate at one end and an open inlet at the opposite end of the wheel defined by an inlet ring portion thereof, a wall member of the casing structure transverse to the wheel axis having an air inlet opening, the margins of which closely approach the inlet ring portion of the wheel so as effectively to constitute a running air seal therewith, a secondary transverse wall member substantially coplanar with the back margin of the wheel, and having an opening of a diameter closely approximating that of the wheel and forming an effective running air seal for the periphery of the wheel, an intermediate wall member forming, with those aforesaid, a pair of scroll housings collectively embracing substantially the full length and full periphery of the blower wheel, the intermediate wall member having a wheel opening, the margins of which closely approach the bladed periphery of the wheel to minimize passage of air between the scroll housings, the intermediate wall member being spaced substantially closer to the back than to the inlet of the wheel, whereby to constitute the rearmost scroll housing as a relatively high pressure air chamber, and the scroll housing nearest the inlet end as a relatively lower pressure chamber, a scroll element in each scroll housing, means formed at least in part by the wall members and casing structure, constituting a tangential air delivery passage from each scroll housing, and means for driving the blower wheel.

2,330,988. REFRIGERATOR. Alfred E. Nave, Newburgh, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application July 10, 1940, Serial No. 344,709. 1 Claim. (Cl. 20—74).



A trim strip for use on a refrigerator cabinet wall, said strip being substantially flat and having a pair of substantially parallel spaced ribs on one face thereof, a third rib located between said pair of parallel ribs and being of lesser height than the height of said parallel ribs, and a substantially rectangular bowed fastening strip having a pointed prong substantially normal to the convex face thereof, said fastening strip being positioned in the channel between said parallel ribs so that the fastening strip when flattened is wedged between said parallel ribs with the portion of said fastening strip opposite said prong bearing against said third rib.

2,331,001. TAPPING AND COOLING DEVICE. Albert B. Simon, Bellrose, N. Y. Application July 6, 1939, Serial No. 283,128. 5 Claims. (Cl. 225—2).



1. Combination with a bushing adapted to be secured in an opening in a container wall, said bushing having a diaphragm at its lower end, openings in said diaphragm communicating with the interior of the container, said openings

(Continued on Page 27, Column 1)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted," 5¢ per word; minimum charge, $2.50. Three consecutive insertions, 12½¢ per word; minimum charge, $6.25.

RATES for all other classifications, 10¢ per word, minimum charge, $5.00 per insertion. Three consecutive insertions, 25¢ per word, minimum charge, $12.50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

EQUIPMENT FOR SALE

FOR SALE: Iceberg water cooler manufacturing business, complete with all designs, special tools, patents and Good Will. An especially good buy under present conditions. Correspondence solicited. THE ICEBERG CORP., Gardner, Mass.

NEW HIGH AND LOW Pressure C-H Switches, $8.75. New high pressure or air G-H switches, $4.90. Frigidaire used model 'K' compressors, $7.00. Complete ½ H.P. Frigidaire model 'K', "as is," less motor, $15.00. F.O.B. New York. Write for our surplus list. A 25% deposit must accompany all orders. EDISON COOLING CORP., Dept. R., 319 E. 149th Street, New York 51, N. Y.

MILK COOLERS equipped with General Electric Condensing Units. Various sizes. New, guaranteed equipment. Sold to dealers without priority. Orders taken for immediate and spring delivery. RAMSEY BROTHERS CO., 727 Bolivar Rd., Cleveland 15, Ohio.

CONDENSING UNITS. New and in original crates. ¼ hp. to 1½ hp. air cooled, 60 cycles, single phase. Popular makes only. No ratings necessary. Send for list. Inquire SAMUEL GREEN, 1800 Pennington Rd., Trenton, N. J.

FOR SALE: Long established refrigeration business in Los Angeles. Representing national manufacturer. $20,000 will handle. Retiring on account of ill health. Box 1485, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

BEST OPPORTUNITY in all America both during and after the war. San Diego, California offers you everything worth living for. We need good service men. Will pay top wages, time and a half and double time for over 48 hours plus liberal commissions. WRIGHT REFRIGERATION SERVICE, 1337 India St., San Diego 1, Calif.

DIVISIONAL SALES MANAGER to handle refrigeration accessory sales from Western factory. Permanent position to right party. Write giving experience, references and age. Box 1478, Air Conditioning & Refrigeration News.

POSITIONS WANTED

TWO FIRST CLASS commercial refrigeration service men desire permanent position with well established firm in south or south-central states. At present working for strictly commercial concern in city of over 100,000 on both high and low pressure service and installation. Please state salary and working conditions in first letter. Box 1482, Air Conditioning & Refrigeration News.

EQUIPMENT WANTED

WANTED TO BUY—Complete refrigeration business or any amount of surplus refrigeration parts and motors. Box 1477, Air Conditioning & Refrigeration News.

USED CONDENSING UNITS. We want to buy some ½ and ¾ 110-220 volt 60 cycle methyl condensing units in good operating condition. TRILLING & MONTAGUE, 2401 Walnut St., Philadelphia 3, Pa.

ICE CUBE TRAYS: About 35,000 ice cube tray dividers, rubber, aluminum, or steel, or interested in disposing of 35,000 popular size ice cube trays without dividers. Also complete ice cube trays, refrigerator accessories or units and refrigerators all types, commercial or domestic, any quantity. HOME DISTRIBUTORS, INC., 137-45 Northern Blvd., Flushing, N. Y.

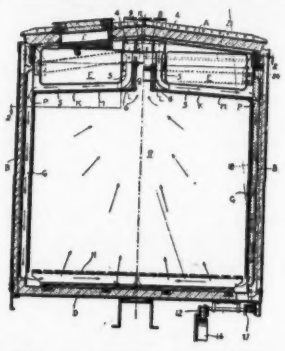
Patents (Cont.)

(Continued from Page 26, Column 4)

being upon diametrically opposite sides of the center of the bushing, a valve upon the side of said bushing adapted to be on the interior of the container when the bushing is in position, said valve being movable to open and close the said openings, a valve stem upon which said valve is rotatably fixed at its mid point, said stem being mounted in said diaphragm at its center, means for rotatably securing said valve and valve stem to said diaphragm, an attachment body, a bayonet joint connection for securing said body to said bushing, a plug and socket connection between said stem and said body permitting relative longitudinal, detaching movement of said stem and said body, but preventing relative rotation thereof, said valve and said body being secured in such relative angular positions about the center line of said bushing that said openings will be closed by said valve when said body is moved to detach it from the bushing and said valve will be moved to open said openings when said body is secured to said bushing and a plurality of pipes slidably mounted in said body and adapted to be in line with said openings when said body is in secured position within the bushing.

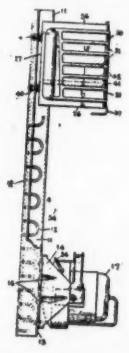
2,331,002. AIR CIRCULATING MEANS FOR REFRIGERATOR CARS. Arthur E. Small, Porter, Ind., assignor to Standard Railway Devices Co., Chicago, Ill., a corporation of Delaware. Application Aug. 3, 1942, Serial No. 453,453. 5 Claims. (Cl. 62—17).

1. In combination with spaced apart walls and the roof of a refrigerator car, spaced apart refrigerant containers below the roof, means cooperating with each of said containers to form an air cooling passage adjacent the container, means to form a vertically extending duct between said containers, air circulating means in the upper part of the car, a return air conduit leading to said air circulating means disposed above said duct and having a perforated lower side and flue means



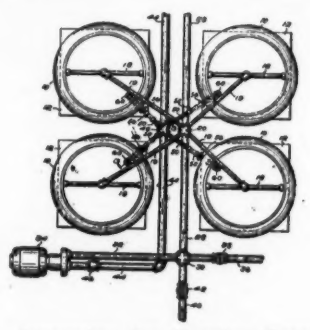
arranged to receive air from said air circulating means and to discharge the air into said passages distributively along the length thereof.

2,331,099. REFRIGERATION APPARATUS AND METHOD. William B. Anderson, West Springfield, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application June 19, 1942, Serial No. 447,640. 10 Claims. (Cl. 62—1).



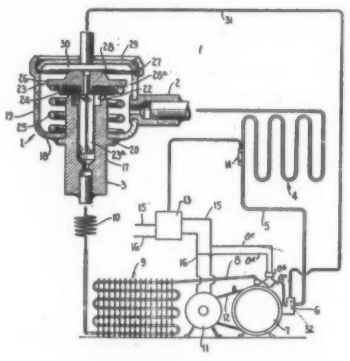
1. A packaged refrigerating unit comprising a condenser having a substantially vertical surface when in its normal operating position, a refrigerant compressor secured to said condenser in normal operating relationship therewith, an evaporator having a portion which is uppermost when the evaporator is in its normal operating position, and means securing said evaporator to the vertical surface of the condenser in such a position that said normally uppermost portion of the evaporator faces said surface of said condenser.

2,331,184. APPARATUS FOR THAWING FROZEN PRODUCTS. Fred Warren Goldthwait, Melrose, Mass. Application Feb. 19, 1941, Serial No. 379,733. 3 Claims. (Cl. 99—234).



1. Apparatus for thawing frozen meat products, comprising a series of spray pipes maintained at predetermined height in a group above the floor, a shut-off valve controlling the individual group of spray pipes, a plurality of vats each provided with a return outlet near its bottom and each movable independently upon the floor into position beneath one of the spray pipes, supply and return pipes located beneath the group of spray pipes and centrally within the outline of the group, and flexible detachable return connections extending outwardly from the return pipe to the outlet of each vat, whereby any vat may be brought into or overhead spray and a return connection. moved out of operative relation to an

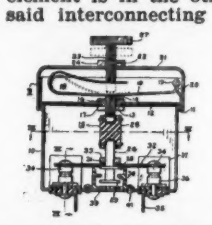
2,331,264. REFRIGERATING SYSTEM. Franklyn Y. Carter, Detroit, Mich., assignor to Detroit Lubricator Co., Detroit, Mich., a corporation of Michigan. Application May 17, 1940, Serial No. 335,846. 4 Claims. (Cl. 62—8).



1. In a refrigerating system, evaporating means, means for supplying refrigerant to said means, means for intermittently extracting refrigerant from said evaporating means and discharging the extracted refrigerant into said supplying means, pressure sensitive means interposed between said supplying means and said evaporating means, and means for supplying a pressure to said pressure sensitive means greater than the pressure in said evaporating means upon cessation of said extracting means thereby to cause said sensitive means to stop further flow of refrigerant from said supplying means to said evaporating means.

2,331,408. CONTROL APPARATUS. Gerald P. Marcy, Longmeadow, Mass., assignor to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Jan. 18, 1941, Serial No. 374,997. 7 Claims. (Cl. 200—139).

1. In a thermostatic switch, the combination of electric contacts, a snap-acting, bimetallic element adapted to move selectively to two positions in response to changes in temperature, means for interconnecting said bimetallic element and said contacts to open the same when said bimetallic element is in one of said positions and to close said contacts when the bimetallic element is in the other of said positions, said interconnecting means in-

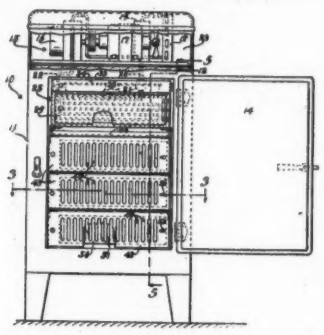


cluding a second bimetallic element adapted when heated to bias said snap-acting element toward the contact-opening position, and means for heating said second bimetallic element only when said contacts are closed, whereby the temperature differential at which said first-named bimetallic element opens and closes said contacts is decreased.

2,331,437. HEAT EXCHANGING ELEMENT. Harrison D. Sterick, Pittsburgh, Pa. Application July 23, 1941, Serial No. 403,614. 4 Claims. (Cl. 257—262).

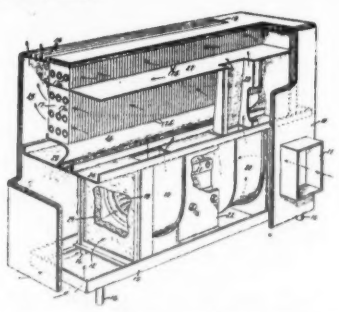
1. The combination with a supporting member, of a heat exchanging element in the form of a metal strip having a body portion extending lengthwise thereof and spaced inwardly from the side edges of the strip, said strip being provided with a plurality of closely spaced slits extending outwardly from both sides of said body portion to said edges of the strip and forming two rows of narrow fins, said strip being curved transversely and coiled around said supporting member, and a coiled pipe engaging the inner surface of said body portion and holding it against the supporting member.

2,331,560. REFRIGERATOR. Pietro Maniscalco, Chicago, Ill. Application Nov. 15, 1940, Serial No. 365,766. 10 Claims. (Cl. 62—89).



1. A refrigerator comprising a cabinet having heat insulated walls, chamber forming means mounted in the cabinet and having refrigerant conducting means thereon to provide a freezing chamber, partition means mounted apart across the cabinet, providing shelves therein and having doors thereon, thereby forming several individual storage chambers, and apertured means provided on at least one of the partition means and doors for controlling circulation of air therethru.

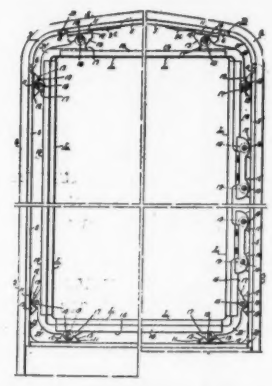
2,331,691. AIR CONDITIONING APPARATUS. Albert B. Hubbard, West Orange, N. J., assignor to General Electric Co., a corporation of New York. Application June 13, 1941, Serial No. 397,880. 2 Claims. (Cl. 257—137).



2. Apparatus for conditioning the air within an enclosure, including a duct structure providing an air mixing chamber and two ducts opening into said chamber, means including a fan for discharging air from the enclosure through out of said ducts and into the chamber, means including a second fan for discharging air from outside the enclosure through the other of said ducts and into the chamber, said structure having an outlet for discharging air from said chamber into the enclosure, the walls of said chamber being so arranged with respect to the opening of said other duct into said chamber as to confine the stream of air discharged from said one duct so as to pass substantially transversely of and directly across the open end of said other duct on its way to said outlet whereby the air from said other duct produces a direct choking effect on the stream of air discharged from said one duct and tends to reduce the cross-sectional area thereof so as to maintain substantially constant the volume of air discharged from said outlet into the enclosure.

2,331,845. REFRIGERATOR CONSTRUCTION. Theodore W. Rundell, Abington, Pa., assignor to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application June 13, 1941, Serial No. 397,972. 5 Claims. (Cl. 220—15).

1. In a domestic refrigerator cabinet construction comprising a one-piece sheet metal outer shell bent to form the top and side walls of the cabinet, said shell having an inturned front edge flange at right angles to the top and side walls thereof, a food liner disposed within the shell and spaced therefrom, said food liner having front edge flanges extending in the direction of the front edge flange of said shell, an elongated reinforcing member shaped to the configuration of the top corner and adjacent wall portions of the shell and secured interiorly of said shell around the top corner portions thereof in abutting relation with the inner surface of the front edge flange of the shell and in continuous bracing contact with the inner surface of the corner and adjacent side and top wall portions there-



of, said reinforcing member extending continuously between points at opposite sides of the corner portions and having supporting tabs thereon adjacent the ends of said member so that said tabs are disposed at respectively opposite sides of each top corner of the shell, a reinforcing member secured to the flanges of the food liner at the top corner portions thereof and having tabs thereon spaced from each other and from each top corner of said liner at respectively opposite sides thereof, said tabs being correspondingly positioned with respect to the tabs of the reinforcing members of the outer shell, and means connecting together the corresponding pairs of the tabs of the reinforcing members of the outer shell and food liner.

Serviceman Training Program Will Rely Heavily on Local Emergency Councils

(Concluded from Page 1, Column 3)

dustry in this way.

However, the cooperation within the WMC and its local offices as well as the U.S.E.S. and other government agencies will be provided as previously promised.

Members of the National Refrigeration War Council (which established the National Refrigeration Service Manpower Committee) are being contacted on this matter of providing funds.

It was emphasized by Mr. Kromer that the "Local Emergency Refrigeration Councils" set up to administer the training program locally should consist not only of organizations or individual operators doing service work, but should include suppliers, manufacturers, agents, etc. who have an interest in the industry.

SHOULD START NOW

While official "announcement" of the program will not be made until the National War Council takes action on the financing of the program, Mr. Kromer points out that groups who start organization of their Local Emergency Refrigeration Council immediately will be that much farther ahead.

Instructions from the national office of the War Manpower Commission at Washington are now going out to regional directors of WMC to permit constructive work by the government agencies with the committee.

It is expected that the complete plan and outline for the training program proposed by the National Refrigeration Service Manpower Committee will be ready for publication in the next regular-sized issue of Air Conditioning & Refrigeration News.

The text material for the training course will be available by the time the local committees have arranged for the coordinator, and have contacted the local war agencies that will be responsible for supplying these texts. The kits for the coordinator will be supplied before the trainees have been selected and the class is ready to start.

The Council of Electric Operating Companies headquartered in Washington has promised to provide a representative from the local power companies to help in the formation of the Local Refrigeration Emergency Council. The local group will then select its officers and the coordinator of the program.

A training committee is the most important part of the Local Council's functions. It should operate to survey the local situation, estimate the number of trainees needed, obtain classroom facilities, advertise for trainees, and arrange for supplemental text material.

MUST BE EMPLOYED

It is recommended by the WMC that for continued cooperation from Selective Service and the U. S. Employment Service, each trainee must be employed by the service agency to whom he is assigned.

Two types of training courses are proposed, one embracing a day school of 200 hours (six hours per day, five days a week for seven weeks with an additional 60 hours of laboratory work; the other being a night school on the basis of three hours per night, four nights per week, for 17 weeks.

If the trainee attended the night school he could act during the day as a helper in the service organization. The second method is recommended in areas where it is not possible to obtain instructors from the local boards of education, and the instructors taken from industry would thus be able to keep up their regular employment.

The training committee is also urged to arrange contacts with the director of the nearest U. S. Employment Service office to see that draft boards observe Selective Service Board Memorandum Nos. 115, 115-A, and 115-B. In accordance with 115-B, the USES is to have referred to it all cases of men engaged in critical occupations, so that they may investigate such cases and report as to whether the man is using his highest skill for the war or essential civilian effort.

Other committees who have important functions are the Selective Service Committee (to contact local draft boards), and the Price and Wage Committee, to contact the War Labor Board to fix wage rates that will permit the employment of trainees and retention of experienced mechanics; and to contact the OPA to see that a fair rate is obtained for all on service charges on a basis of a minimum rate per call.

Aluminum Fins Now Permitted For Coils

(Concluded from Page 1, Column 2)

to be considerably improved, making wider use of this metal possible and permitting in some instances its substitution for copper, which is still critical.

Aluminum specified in the order is "low grade aluminum ingot," which is officially defined as "aluminum in ingot or similar raw form (but not scrap) containing at least 3% by weight of copper and 0.8% by weight of iron."

Wide variety of uses are permitted for aluminum under the amended order. In addition to finned coils, anodizing equipment may utilize aluminum, likewise data and instruction plates up to 0.035 inch thick.

It may also be used in electric bus bars, bare electrical conductor, and current carrying accessories for conductors, and in the following parts of electric motors: Auxiliary motor cooling fans, rotors, and structural parts where the use of aluminum is required because of lightness of weight.

Aluminum is permitted for "repair and maintenance parts for mechanical or electrical equipment use domestically or in industry. Order M-1-d requires those in possession of aluminum scrap to deliver it to a scrap dealer or other person authorized to receive it, and manufacturers of repair parts are urged to continue their encouragement of the recovery of aluminum scrap," states the amended order.